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From

CHILDHOOD EXPLORATION *to* CONSERVATION LEADERSHIP:

An Update on BLM EDUCATION, ENGAGEMENT,
and YOUTH EMPLOYMENT Programs



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BLM



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From the DIRECTOR

ON BEHALF OF THE STAFF at the Bureau of Land Management (BLM), I am pleased to present this overview of the BLM's 2011 accomplishments in the areas of education, interpretation, and youth involvement.

In keeping with the BLM's commitment to the concept of shared stewardship, we view these programs as integral to effective resource management. The efforts highlighted in this report are helping to grow a population of scientifically literate citizen stewards who are eager to assist the BLM with complex multiple-use issues on public lands. By educating, engaging, and employing young people in the BLM's resource programs, we are helping to shape the next generation of conservation leaders.

BLM programs also support the goals of broader administration initiatives, such as the Secretary of the Interior's Youth in the Great Outdoors, President Obama's America's Great Outdoors, and the First Lady's Let's Move Outside. Each program provides opportunities for the public to connect with public lands and waters and to pursue healthy, active lifestyles.

BLM public lands are truly "learning landscapes," providing exceptional education and engagement opportunities for students, lifetime learners, and the general public. While a report of this length can highlight only a small number of the BLM's programs for youth and adults, I hope it will give readers a sense of the scope of the BLM's efforts, including the superb formal education programs offered at BLM Hands on the Land outdoor classrooms. Hands-on field experiences are also helping college-age interns expand their skills and try out possible future careers.



In addition, thousands of children and families are benefiting from outdoor opportunities provided through the BLM's Take It Outside! programs.

Many of the initiatives described here attest to the important role that partners play. A prime example is the BLM's success in employing young people as part of the Secretary's high-priority goal to increase youth employment throughout the Department of the Interior. The BLM hired nearly 3,900 youth in Fiscal Year 2011. More than 1,700 of the youth employed were hired through partner organizations. Working as youth corps crew members or as individuals through universities and other organizations, young people are participating in virtually every BLM resource program.

I am grateful to the agency staff, volunteers, and partners who have helped to make the BLM a nationally respected leader in the fields of education, interpretation, and youth involvement. We know that the health and productivity of the public lands depend on citizens who are informed and willing to assist us in protecting and restoring America's natural and cultural legacy. We will continue to work together to cultivate that commitment to shared stewardship and to bring our programs to ever-expanding and increasingly diverse audiences.

A handwritten signature in black ink, which appears to read 'Robert V. Abbey'.

Robert V. Abbey
Director, Bureau of Land Management



About the BLM

The NATION'S LARGEST Land Manager

The Bureau of Land Management (BLM), one of eight agencies within the U.S. Department of the Interior (DOI), may aptly be described as a small agency with a big mission: to sustain the health, productivity, and diversity of America's public lands for the use and enjoyment of present and future generations. The remnants of the vast, federally owned tracts that were once known as the public domain, the BLM's National System of Public Lands comprises about 245 million acres of the United States—fully one-eighth of our nation's land area, located mostly in 12 Western States, including Alaska. The BLM also administers 700 million acres of mineral estate across the country.

Multiple Uses and WORKING LANDSCAPES

Managed for multiple uses, as mandated by the Federal Land Policy and Management Act of 1976, America's resource-rich public lands provide our nation with vital commodities as well as scarce open space and critical wildlife habitat. In 2011 alone, recreation and other activities on BLM-managed lands contributed more than \$130 billion to the U.S. economy and supported more than 600,000 American jobs. At the local level, rural Western communities also benefit greatly from the economic fruits of such "working landscapes" through employment opportunities and tax revenue.

While commodity production and income generation are important, the public lands also host some of the nation's most remarkable landscapes, ecosystems, and heritage sites. Overall, the public lands are home to more than 3,000 species of wildlife and a wide array of plants, some of which are threatened or endangered. The BLM also manages an estimated 4 million archaeological and historic sites, from the dwellings of America's earliest human inhabitants to the historic ghost towns of the Old West. Paleontological resources abound, too; in fact, of the 700 dinosaur species known to science worldwide, 7 were discovered on Utah public lands in the space of just 1 year.

The BLM'S National LANDSCAPE CONSERVATION System

Many public lands are highly prized for their cultural, ecological, scientific, educational, wildlife, and aesthetic values, and in numerous regions play critical roles in habitat and resource conservation efforts. A total of 887 units of prime conservation lands, trails, and waterways are now included in the BLM's National Landscape Conservation System (NLCS). This system, created in June 2000, is an organized network of special places managed to ensure that their unique resources are conserved, protected, and restored for future generations. All areas included in the NLCS have been designated by either Congressional act or Presidential proclamation.



Challenges and OPPORTUNITIES

Some of the most important 21st-century challenges facing the BLM are associated with managing public lands under the pressures of competing demands and a changing American West, where once-remote places are sometimes within a short drive of population centers. But challenges also bring welcome opportunities. Public lands that are close to home allow Americans to benefit more easily and in nontraditional ways: as visitors forming connections through interpretive programs, as teachers and students participating in outdoor classrooms, as families enjoying active lifestyles, as volunteers working for the lands they love, and as young people considering resource careers. Public lands really do belong to all Americans, and by practicing good stewardship and sound conservation today, we can ensure that future generations reap the same benefits—and maybe even some yet to be imagined.

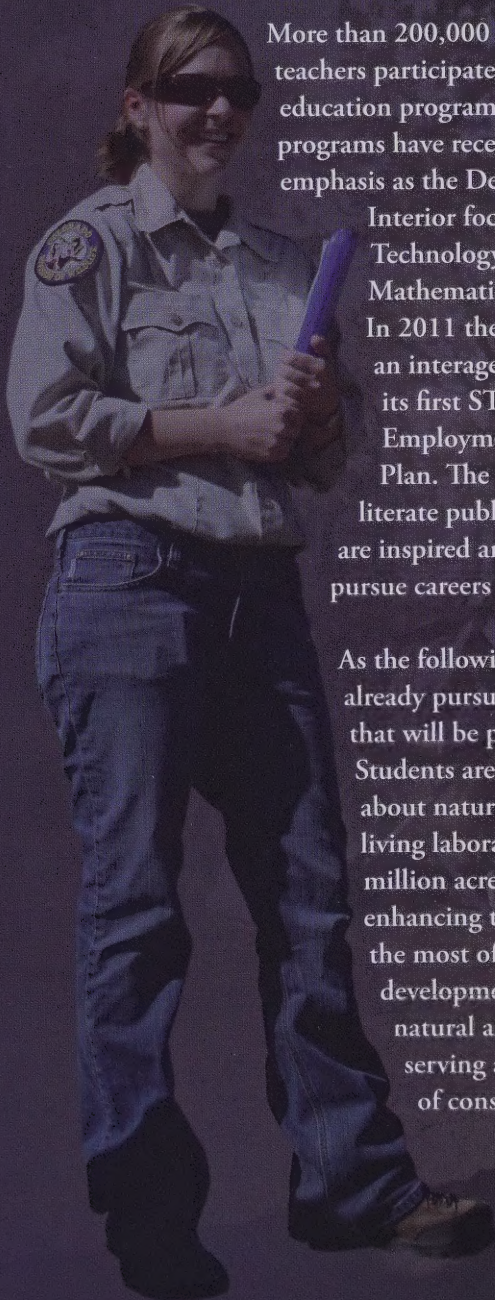


BLM EDUCATION PROGRAMS

Public lands managed by the Bureau of Land Management provide “learning landscapes” of incredible variety and depth. From discovery hikes, to curriculum-based lessons in outdoor classrooms, to in-depth service learning projects, opportunities abound for students and teachers to connect with and learn about their public lands. The multiple-use mission of the BLM offers learners a wide array of subjects to study, as well as opportunities to engage in discussions of real-world issues relevant to science and society.

More than 200,000 students and teachers participated in the BLM’s education programs in 2011. These programs have received additional emphasis as the Department of the Interior focuses on Science, Technology, Engineering, and Mathematics (STEM) education. In 2011 the department assembled an interagency team to develop its first STEM Education and Employment Pathways Strategic Plan. The plan envisions a science-literate public and young people who are inspired and academically prepared to pursue careers in STEM fields.

As the following pages attest, the BLM is already pursuing many of the action items that will be part of the forthcoming strategy. Students are engaged in hands-on learning about natural and cultural resources in the living laboratories found on the BLM’s 245 million acres of public lands. Educators are enhancing their skills and learning how to make the most of the BLM’s assets at professional development workshops. And the BLM’s natural and cultural resource professionals are serving as role models for the next generation of conservation leaders.





Hands on the Land



HANDS ON THE LAND (HOL) is a network of outdoor classrooms supported by Partners in Resource Education, a coalition of six federal agencies: the BLM, National Oceanographic and Atmospheric Administration, National Park Service, Natural Resources Conservation Service, U.S. Fish and Wildlife Service, and U.S. Forest Service.

Having grown every year since its establishment, the network now includes approximately 115 sites from coast to coast, in effect making it America's largest outdoor classroom. All sites offer programs supporting school-based curricula that are correlated to local standards of learning.

Since the HOL network's earliest beginnings, the BLM has been a leader in the program. In partnership with local schools, the BLM's 38 HOL sites offer the premier formal education programs within the agency. The BLM is working to increase the number of participating field sites by 50 percent in the next 5 years and to enhance the quality of programming at existing venues.

To help advance and improve the HOL network, the HOL Working Group was established in 2010. Guided by a strategic framework and an annual work plan, the working group allows interested BLM staff to share their personal experiences, leadership skills, and perspectives to help shape and promote the HOL program bureauwide. The HOL Working Group also plays an important role in representing and conveying field office needs and perspectives to the Washington Office headquarters.

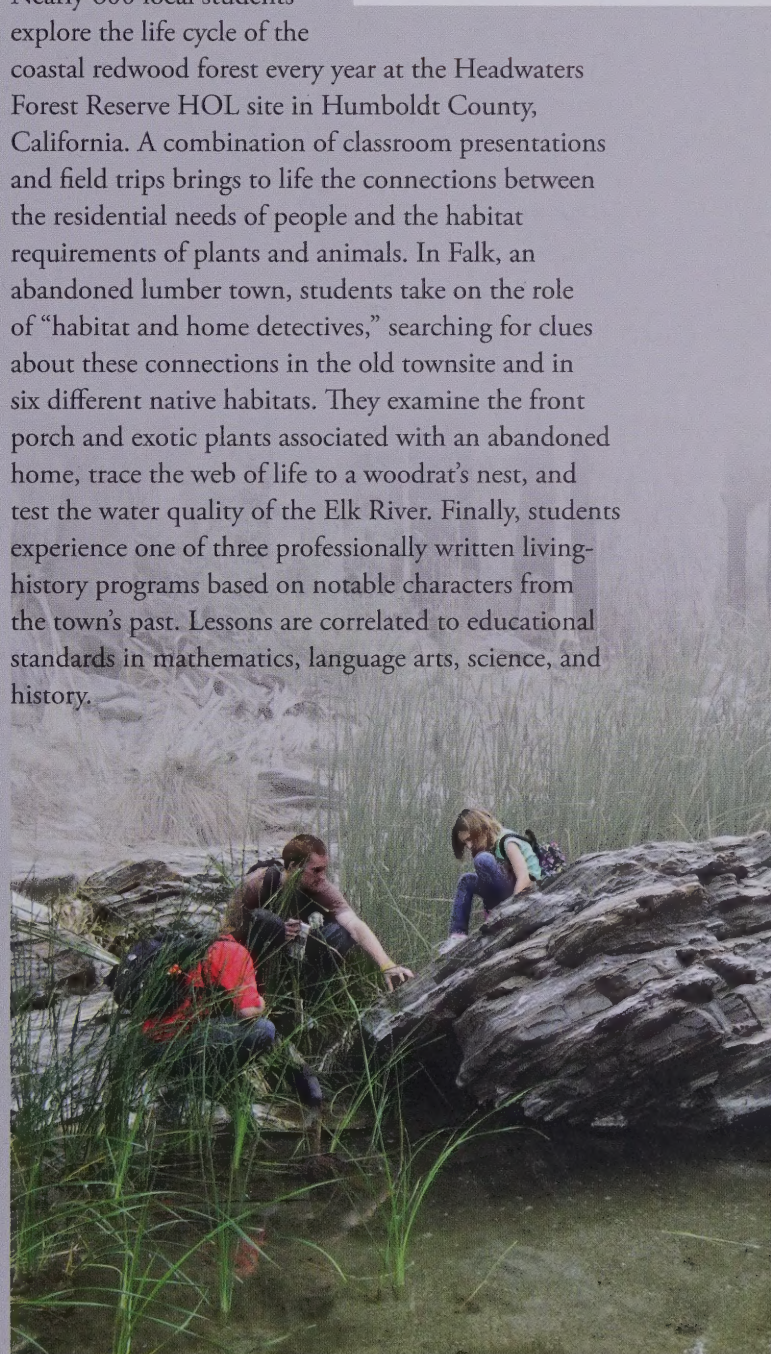
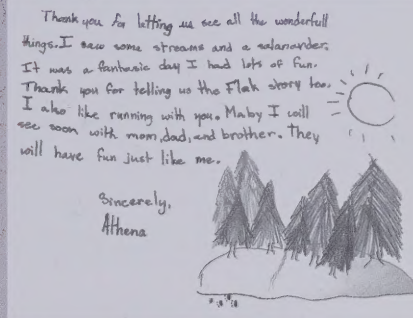
The HOL program is demonstrating that innovative thinking, an interactive website, and real-life experiences in the outdoors can reconnect children to nature and provide learning in fresh and exciting ways.

"Tell me and I forget. Teach me and I remember. Involve me and I learn."

Benjamin Franklin, American statesman

SCHOOLCHILDREN INVESTIGATE HABITATS, HOMES, AND HISTORY AT CALIFORNIA'S HEADWATERS FOREST RESERVE

Nearly 600 local students explore the life cycle of the coastal redwood forest every year at the Headwaters Forest Reserve HOL site in Humboldt County, California. A combination of classroom presentations and field trips brings to life the connections between the residential needs of people and the habitat requirements of plants and animals. In Falk, an abandoned lumber town, students take on the role of "habitat and home detectives," searching for clues about these connections in the old townsite and in six different native habitats. They examine the front porch and exotic plants associated with an abandoned home, trace the web of life to a woodrat's nest, and test the water quality of the Elk River. Finally, students experience one of three professionally written living-history programs based on notable characters from the town's past. Lessons are correlated to educational standards in mathematics, language arts, science, and history.



A LOCAL PARTNERSHIP BRINGS ARCHAEOLOGY TO LIFE FOR UTAH STUDENTS

Working with educators and volunteers, the BLM's Grand Staircase-Escalante National Monument (GSENM) and Grand Staircase Escalante Partners (GSEP) welcome hundreds of local students to HOL programs on the monument every year. Two traveling "Discovery Trunks" filled with materials about the monument's archaeology, and containing many of the learning tools used during onsite programs, are also available to classes unable to visit the monument in person.

Local participants experience paleontology and archaeology directly in field-based programs at GSENM visitor centers, while GSEP's native plant program and stream bank restoration initiative engage high school students in natural resource sciences. The monument's education programs also allow students and educators to explore connections between the monument and surrounding communities.

The curriculum is approved by the State of Utah for cultural history and outdoor learning. GSEP helps area teachers use the monument's web-based curriculum in environmental education at the high school level, covering topics not only in archaeology, geology, and paleontology but also in ecology and human history.

OFFSHORE AND ONSHORE, "OCEAN IMMERSION" DRAWS CLASSES TO THE CALIFORNIA COASTAL NATIONAL MONUMENT

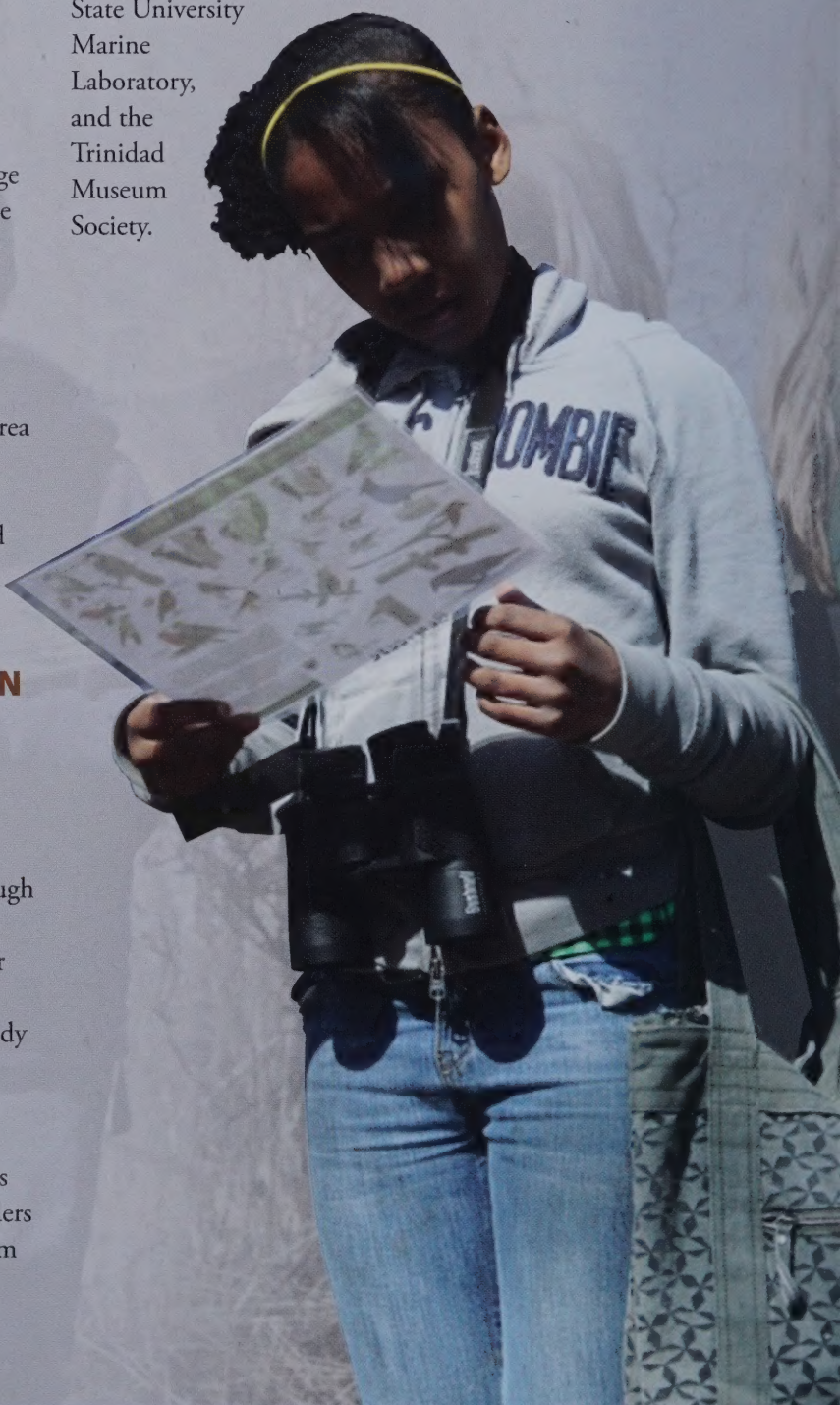
Ocean Immersion is a program that explores diverse marine environments through the sciences and through language arts, music, mathematics, and visual arts. Primary grades learn about near-shore, more familiar habitats, while upper elementary grades focus on offshore marine habitats. Middle school students study coral reefs and far-off polar seas.

Another exciting component of the California Coastal National Monument HOL program involves mentoring of Trinidad Elementary School sixth-graders by a BLM interpretive specialist, which prepares them to share what they have learned with fourth- and fifth-grade students from Eureka and Fortuna. At

low tide, the older students guide the younger ones through fragile tidal pools, introducing their peers to the wonders of their own backyard. For many of the students, this is a new experience. In 2011 fortunate participants glimpsed a sea clown nudibranch (*Triopha catalinae*) and an eel-like fish called a rock pricklyback (*Xiphister mucosus*).

Ocean Immersion is able to provide classroom visits and field trip activities through a partnership among the town of Trinidad, the California Coastal National Monument, Trinidad Elementary School, Humboldt State University

Marine Laboratory, and the Trinidad Museum Society.



SUMMERS ARE FOR DISCOVERY IN UPTON, WYOMING

Upton is a small town in eastern Wyoming with easy access to public lands. Since 2008 the BLM's Newcastle Field Office has partnered with Upton Middle School to offer the Discovery Summer Program, an educational experience that connects students with the outdoors, increases knowledge of field science, and fosters an appreciation for conservation ethics and land stewardship. Weeklong sessions expose students to careers in natural resources as they interact with employees from the BLM, U.S. Forest Service, and State of Wyoming.

Some students learned about forest ecology in 2011, quickly using their newly acquired knowledge to collect data in a forested area infested by mountain pine beetles. This data established a baseline for evaluating future data to help measure overall forest health. Other students collected seeds of the silver lupine (*Lupinus albifrons*), a flowering shrub. Their efforts provided a seed supply to the Seeds of Success program, a partnership between the BLM and the Chicago Botanic Garden that supports native plant restoration projects. Mini-lessons in wildlife biology, astronomy, fire ecology, recreation planning, water quality testing, and wildfire suppression rounded out the sessions.

HIGH SCHOOL STUDENTS MONITOR RIPARIAN AREAS AT ARIZONA'S AGUA FRIA NATIONAL MONUMENT

Through the River Pathways program, BLM-Arizona and the Audubon Center offered nine sessions in environmental literacy for all high school students within the Phoenix Union High School District. In 2011 a total of 278 students learned about

southwestern hydrology, riparian areas, biology, and multiple-use resource management. Working alongside BLM resource managers to collect data, they gained experience using the BLM's riparian monitoring protocol to monitor sites on public lands. Lab sessions took place at the Audubon's Rio Salado Center; field sessions, at the Agua Fria River. Some interested students went on to work as BLM summer interns and continued to monitor riparian habitat and conduct other stewardship and conservation work.

INQUIRING MINDS GET TO KNOW RED ROCK CANYON NATIONAL CONSERVATION AREA

As one of the BLM's first HOL sites, Red Rock Canyon National Conservation Area (NCA) has long offered exceptional outdoor classroom programs to schoolchildren in southern Nevada. Featured programs meeting state education standards regularly engage and educate students by using scientific inquiry.

Still, many underserved, inner-city youth have never experienced the unique geology, plants, and animals of Red Rock Canyon NCA. In partnership with others, Red Rock Canyon NCA has expanded its programming to reach out to this audience by providing nature-based education programs and service projects for at-risk youth. During the 2010–11 school year, the Red Rock Canyon Interpretive Association partnered with the Greater Las Vegas After-School All-Stars and the Clark County School District to bring students to the NCA, where they could enjoy hands-on experiences in the outdoors, reconnect with nature, and participate in unique learning opportunities.



Other BLM Formal Education Programs

WHEN EDUCATORS NEED a good spot for outdoor education programs, many BLM lands offer the perfect setting. In some locations, BLM resource specialists lead the programs; at others, teachers conduct their own outdoor lessons. When school budgets are too limited to pay for field trip buses, BLM staff or volunteers take targeted BLM educational programs into the classroom.

"SUPER SATURDAYS" OFFER ALASKA STUDENTS SCIENCE AND SKILLS

For some lucky local students, the BLM's Campbell Creek Science Center in the heart of Anchorage was the place to be on five Saturdays in 2011. Children in grades K–8 came to the center to enjoy science-based enrichment activities and outdoor experiences. What they took home with them were wilderness skills, such as compass use and orienteering; outdoor survival methods; and fire building. After being introduced to a live owl and porcupine in the classroom, participants

"I really feel strongly about this program because I see a vast disconnect between the youth of our community and our public lands... [The] program strengthens this community by empowering our kids in science and technology and environmental stewardship, and provides a viable career and education link to natural resources—irrespective of family income and school budget limitations."

Office of Surface Mining Volunteers in Service to America (VISTA) volunteer for the Greater Arkansas River Nature Association

"Many students expressed that they were so happy to come and be able to experience this. I saw lots of engaged attention and interest and heard many questions and observations."

Teacher/chaperon

explored the forest on snowshoes in search of owl habitat. Nine high school volunteers assisted throughout the program.

YOUTHS GET OUT AND GET "HANDS-ON" IN THE UPPER ARKANSAS VALLEY

Elementary students from Salida, Colorado, were "gone fishing" for part of 2011, learning how to cast for fish with help from Trout Unlimited volunteers. The children also practiced using compasses in a scavenger hunt activity and collected riparian insects to view under a microscope. The activities were part of the Upper Arkansas Valley Youth Ecological Literacy Program, which energizes the local school curriculum by adding a hands-on, outdoor learning component to teachers' classroom lessons. Colorado's academic standards for pre-kindergarten through 12th grade are met, as classes in each participating grade engage in field trips, classroom visits before and after the field trip, and a service project. The program reached 240 students and 99 adults through instruction in terrestrial biology, aquatic biology, geology, cartography, and Leave No Trace ethics.

*"This was the best Saturday ever!"
"When can we come back?" "I can't wait to bring my family here."*

Super Saturdays student participants

AWARD-WINNING ECOLOGY PROGRAM SERVES THE UNDERSERVED

Now in its fourth year, northwest Colorado's award-winning Bioregion in Your Backyard program helps schoolchildren in underserved communities connect with local natural surroundings on BLM public lands. The BLM's Cedar Mountain, an area landmark rising a thousand feet above the Yampa Valley, provides the setting for students to spend a day learning about native plants and animal species and the ecosystems they inhabit. Educational games and activities enliven the experience. BLM staff members introduce students to their public lands and guide them through a resource management "dilemma exercise"—incorporating many realistic land use perspectives—so they can learn how to make decisions about stewardship of the public lands.

Bioregion in Your Backyard began in 2007 through a partnership among Yampatika (a nonprofit environmental education organization), the BLM, and Colorado Parks and Wildlife. The program builds on Colorado's sixth-grade curriculum for ecosystems, biomes, and place-based inquiry. In 2011 the Colorado Alliance for Environmental Education presented Bioregion in Your Backyard with its Environmental Education Program Award.

KIDS DISCOVER WORMS, BATS, AND BIRDS IN NORTHERN VIRGINIA

S.E.E.D. is busy growing the next generation of nature lovers. Students Encouraging Environmental Discovery, or S.E.E.D., supports local school curricula with learning activities about everything from worms, bats, birds, and mammals, to soil, watersheds, and solar energy. It also teaches kids how to fish, camp, and hike, while practicing the principles of Leave No Trace and Reduce, Reuse, Recycle. A total of 500 students and 40 adults participated in environmental education programming offered by S.E.E.D. in 2011. After-school activities such as these, appealing to local elementary school students, was the goal of the recent partnership among the BLM's Lower Potomac Field Station, the Parks and Recreation Department of Northern Virginia Community College, and the Fairfax County after-school program.

"The moment one gives close attention to anything, even a blade of grass, it becomes a mysterious, awesome, indescribably magnificent world in itself."

Henry Miller, American author



YOUNG STUDENTS BECOME CITIZEN SCIENTISTS "BIRD BY BIRD"

In 2011 Idaho's Bird by Bird program, a collaborative educational project among federal, state, and private organizations, introduced 283 Boise Valley students to nature through birdwatching and improvement of bird habitat. Six Bird by Bird facilitators provided assistance in setting up equipment, and they visited classrooms

"The one hope I have for my students is that now they will be more observant when they are at the park, ball game, or in a parking lot. It is just like the saying about planting seeds and waiting for them to grow. Maybe someday down the line, a student will say, 'Look there's an American goldfinch!' "

Mountain View
High School teacher

each month to discuss bird-related topics. Eleven Idaho classrooms received tube and ground bird feeders, spotting scopes and tripods, binoculars, a birdbath, perches, birdseed, and a collection of bird books to aid students in observation and caretaking activities.

Students became the primary caretakers by putting out food and water for birds and maintaining equipment. They also planted trees and native plants on school grounds to enhance bird habitat. After collecting data on bird abundance, distribution, and migration, they entered the information into the Cornell University Lab of Ornithology's eBird program, a real-time, online checklist. Doing so helped students understand the concept of "citizen science" by allowing them to track their own observations online.

Wild Birds Unlimited, the Bird by Bird program's business partner, provided seed, feeders, and optics at a significant discount, and each student received a bird feeder and bag of seed to take home.

SHARP-EYED FOURTH-GRADERS GATHER FOSSILS WITH BLM-MONTANA EMPLOYEES

A 20-year tradition continued in Billings, Montana, in 2011 when Lockwood School fourth-graders took a field trip to public lands to collect common invertebrate and plant fossils under the helpful





supervision of BLM staff. Before heading out on their expedition, the budding paleontologists spent a few weeks studying geology and the formation of fossils. BLM geologists also presented information on noxious and invasive weeds, cultural resources, and Leave No Trace principles.

NEVADA FIELD TRIP PROGRAM INVITES KIDS TO EXPLORE THE PUBLIC LANDS

In the Classrooms Unleashed field trip program, students of all ages explore public lands within the BLM's Carson City and Winnemucca field offices through a

series of five place-based, interpretive field trips. First-grade students begin by examining the area immediately around their schools. Second-, third-, and fourth-grade students gradually travel farther from home, visiting sites such as Water Canyon and Lovelock Cave. Each year the program teaches students about topics of significance to the area, such as habitats, watersheds, Paiute and emigrant history, and geology. When students visit Water Canyon, they gain hands-on experience in water quality testing and learn about macroinvertebrates and fire science. The Classrooms Unleashed field trip program was developed by the BLM and the Nevada Outdoor School in partnership with the Humboldt County School District and other organizations.

CODY, WYOMING, SIXTH-GRADERS SPEND THE NIGHT OUTDOORS AT FIELD CAMP

The Northwest College Field Camp provides the setting for Natural History Days, a part of the Cody Middle School curriculum during which sixth-graders camp overnight and supplement their recent classroom study of ecology by learning from local experts. In 2011 a BLM geologist taught the children about the area's minerals and rocks and how they were formed, as well as the processes of erosion and deposition. As many as 12 kids attended each of the 3-hour lessons and then boarded a school bus for a trip to three rock outcrops in the area to collect specimens and talk more about geologic history. A favorite activity enjoyed by all was cracking open the rocks to examine the minerals exposed inside.

NATURE TRAIL DRAWS STUDENTS TO NEW MEXICO'S EL MALPAIS NATIONAL CONSERVATION AREA

For the third year in a row, Los Alamos Middle School and the BLM partnered for a 2-day outdoor classroom event at the BLM Ranger Station within the El Malpais National Conservation Area. The entire seventh-grade class learned about the outdoors and stewardship while exploring the ranger station's nature trail. Education stations along the trail provided seven activities and lessons related to science and conservation. In addition to this large event, the NCA hosted dozens of field trips in 2011, introducing more than 500 students to the wonders of their public lands.



Educator Resources and Professional Development

BLM EDUCATION PROGRAMS are not just for children. The BLM also provides professional development opportunities to educators. Project Archaeology and other programs give teachers valuable materials to supplement existing curricula and broaden the educational experiences of their students.

PROJECT ARCHAEOLOGY: PROMOTING CULTURAL RESOURCE PROTECTION SINCE 1990

Created by the BLM, Project Archaeology is an educational program dedicated to teaching scientific and historical inquiry, cultural understanding, and public land stewardship ethics—specifically, the importance of protecting our nation's rich cultural resources. Operated in partnership with Montana State University, Project Archaeology works as a collaborative network of 30 state and regional programs to provide educational materials and professional development opportunities to teachers and informal educators nationwide. Eighteen programs were active in 2011 and reached 1,233 educators. Of these, 767 attended full-length workshops or online courses and are now fully prepared to teach Project Archaeology to students and informal learners. These educators will, in turn, reach an estimated 19,000 learners with high-quality archaeology education every year.

The Project Archaeology Leadership Academy, now in its second year, continued to train a national network of master teachers in social studies and science. Using the award-winning curriculum entitled *Project Archaeology: Investigating Shelter*, academy instructors guided participants through an investigation of a historic slave cabin and prepared 16 attendees from eight states to

“Thank you so much for this opportunity! I was head over heels for the curriculum from my first introduction to it—and was amazed at how my enthusiasm only continued to build as the workshop moved forward. Project Archaeology is truly a treasure that I hope to share with many students, teachers, adults, and museum educators. I am so excited about this program! I can’t get enough!!”

2011 Project Archaeology Leadership Academy participant

provide inquiry-based instruction to their students and professional development instruction to their peers.

Much of Project Archaeology's work is conducted by volunteers, who in 2011 contributed more than 3,000 hours in support of conferences, annual meetings, and the Project Archaeology Leadership Academy. They also offered programs in their states and advised the national program on curriculum development, program management, and long-term strategic planning. Project Archaeology events led by state and regional coordinators not only helped enhance educators' teaching skills but also touched more than 9,000 youth and family learners.



PROJECT ARCHAEOLOGY RECOGNIZED FOR EXEMPLARY CONSERVATION PARTNERSHIP

Each year the Secretary of the Interior confers the prestigious Partners in Conservation awards to partnerships that collaboratively and creatively promote conservation, initiate large landscape projects, and protect natural and cultural resources through diverse stakeholder and youth engagement. In 2011 Project Archaeology was one of 17 partnerships to receive this award for using partnerships to bring high-quality archaeological stewardship education to teachers, students, and informal learners throughout the nation.

"I appreciate the effort you have put into the research behind these activities—and everyone has interdisciplinary crossovers—very effective for teachers to implement into the curriculum. Thank you for this priceless opportunity and knowledge!"

"This program was very professional. The archaeological content was strong, accurate, and meaningful and the educational standards set by the program were up-to-date, relevant, and high. You did not low-ball any aspect of the program but instead expected us to reach for higher understandings in content and pedagogy."

2011 Project Archaeology Leadership
Academy participants

NEW OREGON NATIVE PLANT CURRICULUM TAKES STUDENTS FROM SALMONBERRY TO SAGEBRUSH

Developed through a partnership between the BLM and Oregon's Institute for Applied Ecology, *From Salmonberry to Sagebrush* is an ecoregional native plant curriculum for grades 9–12 that has received rave reviews from educators. The curriculum, which follows the principles of the *Guidelines for Excellence* developed by the North American Association for Environmental Education, leads students through hands-on, inquiry-based native plant education and restoration service-learning activities. These activities integrate science, mathematics, social studies, art, and literacy skills and are tied to Oregon Department of Education standards. Topics covered include plant identification, ethnobotany, and invasive species. During 2011 the curriculum was presented at 36 workshops and conferences in Hawaii, Illinois, North Carolina, Oregon, and Washington State, to an audience of 422 teachers from around the globe.

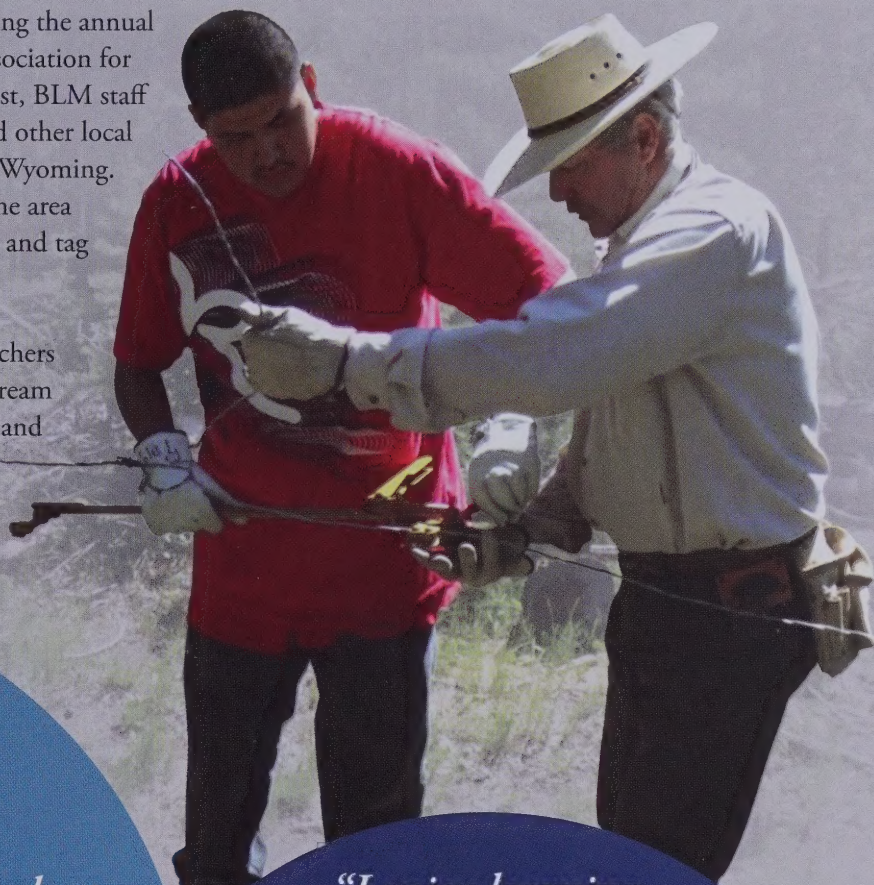


IZAAK WALTON LEAGUE EXPANDS UNDERSTANDING OF THE GREEN ZONE

The BLM's partnership with the Izaak Walton League (IWLA) led to further development and introduction of the Creek Freaks website in 2011, along with the delivery of teacher/youth leader workshops on the use of BLM's riparian module, *Holding onto the GREEN Zone*. IWLA staff conducted workshops and presentations on the *GREEN Zone* at several conferences during the year, including the annual meeting of the North American Association for Environmental Education. In August, BLM staff joined IWLA, Trout Unlimited, and other local partners for a workshop in Lander, Wyoming. Following the training, schools in the area continued to monitor water quality and tag and track trout in local streams.

Thanks to workshops like these, teachers and leaders become familiar with stream ecology and riparian zone concepts and

learn how to run activities from the *GREEN Zone* guide. They also learn how to instruct students on contributing data and other information to the Creek Freaks website. By posting videos, photos, stories, and data about their streams, hundreds of students from across the country can more fully accomplish the objectives of the "Tell the News" portion of the guide.



"The curriculum is excellent! Plants are so important, and these activities are a great way to have students look at plants and learn about them. The Botany Bouquet lesson was a great way to provide students with the motivation to want to learn more of the vocabulary to talk about plants. Students were asking 'what is this...?' It was a great way to show that we need this botanical vocab!!!"

"I enjoy learning the botanical and ecological skills right along with my students. I am hoping to present this curriculum at the next National Science Teachers Association [convention]. I think everyone should have this curriculum in their classroom!"

Teachers who have used *From Salmonberry to Sagebrush* in classrooms



VISITOR OUTREACH

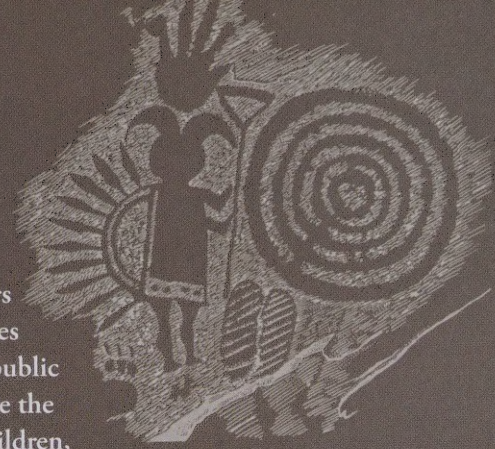
The BLM welcomes visitors of all ages to experience the public lands. Interpretive programs, the BLM's Take It Outside! (TIO) program, partnerships with youth organizations, and service-learning volunteer opportunities all give visitors numerous and varied opportunities to enjoy, learn from, and support the public lands.

Through interpretive programs, visitors can connect personally with the public lands. In 2011 the BLM presented over 18,000 interpretive programs that reached more than 3 million visitors. Whether listening to thought-provoking programs given by an interpreter, viewing wayside exhibits, or accessing information through a smartphone application, visitors were inspired to appreciate cultural and natural resources. Specialized cultural youth camps also connected tribal youth to ancestral lands through learning from elders; interested collegiate youth found summer employment in interpretation; and BLM Junior Docents and trail guides provided interpretation to visitors in several BLM locations.

The TIO program fosters outdoor physical activities and experiences on the public lands in order to improve the health of our nation's children, families, and communities. At the same time, it helps develop the next generation of public lands stewards.

National youth organizations including Girl Scouts USA and the Boy Scouts of America (BSA) also participate in interpretive and educational programs. They often volunteer many hours of service on the public lands as well. In 2011 their service projects ranged from reconstructing a replica Mogollon pithouse, to cleaning campsites, to completing BSA Eagle Scout and Girl Scout "Journey" projects in stream restoration and trail conservation.

Youth group members are not the only ones who can volunteer on the public lands. The BLM's dynamic volunteer program offers unique and diverse opportunities for people from all walks of life to get outdoors, connect with nature, and give back to the public lands.



Interpretation

THE BLM'S INTERPRETERS and partners provide safe and enjoyable experiences for visitors, increase visitors' knowledge of resources and management issues, and encourage stewardship and responsible outdoor behavior. The BLM reaches people through youth engagement activities, visitor center facilities and materials, interpretive structures, and interpretive materials posted at kiosks and waysides and on numerous BLM websites.

SOUTHERN PAIUTE YOUTHS RECONNECT WITH THE PAST

Camping within Arizona's Grand Canyon-Parashant National Monument, young Southern Paiutes learned about their culture from tribal elders in their traditional homelands. Twenty-one children from tribal bands in Arizona, Nevada, and Utah participated in this fourth annual Yevingkarere Camp, held September 16–18, 2011. National Park Service and BLM staff, including

the camp's cofounder, welcomed the participants. During camp, the children learned how to make tools, cordage from cliffrose bark, medicine bags, and small replica brush huts. They also played traditional tribal hand games and the hockey-like game known as Que'pauck. Native language skills, cultural beliefs, and a sampling of native foods were introduced during the outing. A visit to Paiute Cave to observe pictographs concluded the weekend program.



A STUDENT INTERPRETER LEADS THE WAY INTO A CALIFORNIA FOREST

Sixty people a day hike or bike past the renovated train barn at the BLM's Headwaters Forest Reserve in Eureka, California. The structure houses the Headwaters Education Center; yet, except for weekday school groups, visitors were often denied the opportunity to venture inside because of staffing shortages. Then in 2011 the BLM hired a student to provide natural and cultural resource interpretation during the peak visitation months of summer. The student, from Humboldt State University, not only designed programs and gave tours of the area but also led kids and their families through educational pursuits such as fish printing, nature journaling, and owl pellet dissections. The experience benefited the student as well, providing an opportunity to practice for a potential career in interpretation and work with the public. The BLM learned something, too, through the student's successful efforts to establish baseline data on visitation to the barn.

INDIGENOUS PEOPLES TAKE CENTER STAGE IN NEW INTERPRETIVE DISPLAYS

Replicas of a Yokuts brush house and an acorn granary are providing insights about the indigenous peoples of the Bakersfield area to visitors at the BLM-California's San Joaquin River Gorge Visitor Center. Designed with input from local Native American elders and constructed of native materials, these hands-on interpretive displays were installed in 2011 through a cooperative agreement with the Sierra Mono Museum. The brush house is tall enough to accommodate an adult and spacious enough for several children to walk inside, allowing visitors to imagine what it would have been like to live in such a shelter. Soap root brushes, a fish trap, baskets, cordage, and an infant's cradleboard

"Through interpretation, understanding; through understanding appreciation; through appreciation, protection."

Freeman Tilden, American interpretive pioneer

are some of the replicated artifacts used as teaching aids; photo displays depict the process of gathering, processing, and weaving native materials to make these items.

Outdoor exhibit areas were also installed to highlight culturally important native plants. So-called "garden rooms" draw birds and butterflies to the outside deck area so visitors may view native species in a central location. Plants such as redbud, sourberry, and deer grass—critical to local basketry traditions—are focal points in the landscape. Pruned and unpruned versions of the living plants illustrate how Native Americans tailored cultivation techniques to specific uses.

FOR CALIFORNIA SCHOOL KIDS, ROCK ART GETS DISCUSSIONS ROLLING

It's no wonder why third- and fourth-grade students, as well as several adult groups, were frequent visitors to the interpretive programs at the BLM's Belfast Petroglyph Complex near Susanville, California, in 2011. This site, nationally recognized for its rock art and petroglyphs dating back 2,000 years, provides a dramatic backdrop for discussions about the site's cultural significance, archaeological site etiquette, native occupation and ways of life, and ethnobotany. Native American artifacts such as grinding stones, mortars and pestles, and the remnants of a rock-ringed ceremonial area enrich the visitor's experience even further with stirring reminders of the past.

Here, too, students learn about the natural



components of a high-desert volcanic landscape, as well as the importance of local Willow Creek and its riparian corridor.

VOLUNTEERS COVER ALL THE BASES AT BIG MORONGO CANYON PRESERVE

Nestled within the Little San Bernardino Mountains, the desert oasis of Big Morongo Canyon is one of the 10 largest cottonwood and willow riparian habitats in California. In 2011 BLM volunteers, Junior Docents, and supporters from the Friends of Big Morongo Canyon Preserve provided year-round programs for families and other visitors. Volunteers worked at the site's nature center on weekends, assisted with weekly

birdwatching walks, and staffed tables and displays at special events such as the preserve's Spring Fest, Morongo Valley Fiesta Days, and Yucca Valley Earth Day.

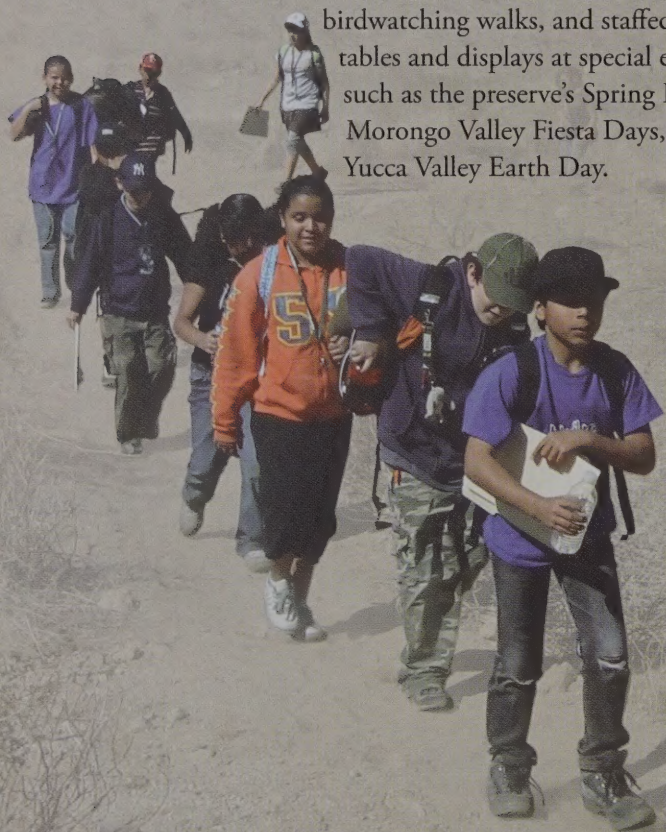
SOUTHERN CALIFORNIA'S JUNIOR TRAIL GUIDES PROMOTE CONSERVATION AND STEWARDSHIP

Whether providing informal interpretation along the trail or at the visitor center, leading nature walks, or helping to develop and construct natural and cultural exhibits, Junior Trail Guides serve as ambassadors to the public for the Santa Rosa and San Jacinto Mountains National Monument. The Junior Trail Guide program, open to children ages 8–14, teaches youth about the monument's biological, cultural, and geologic features while encouraging the development of leadership and communication skills. Eleven young people who participated in the 2011 program have since been certified as monument volunteers.

VISITORS CELEBRATE COLOR AT CALIFORNIA WILDFLOWER FESTIVAL

A full-day program of guided walks and hikes, children's activities, workshops, vendors and exhibitors, plein-air painters, and live music was hosted by the Santa Rosa and San Jacinto Mountains National Monument Visitor Center to celebrate the monument's 2011 wildflower festival. The annual event showcases the monument as a premier spot for spring wildflower viewing and education.

Prominent partners included the Friends of the Desert Mountains, U.S. Forest Service, *Palm Springs Life* magazine, Southern California Edison, and the City of Palm Desert.





IDAHO KIDS' FISH FAIR HOOKS YOUTH

The City of Challis, Idaho, kicked off 2011's National Fishing and Boating Week and Idaho's Free Fishing Day with the annual Idaho Kids' Fish Fair and Kids' Fishing Derby, held at Blue Mountain Pond. Workers at a "Care of Catch" station demonstrated how to care for and clean fish caught during the derby. A donated fishing rod and reel were awarded for the biggest catch by one angler in each of four age groups. In addition, any kid who caught a tagged fish received a donated \$50 savings bond, and a prize was awarded to one angler in each age group for the highest number of accurate casts. This local event was sponsored by the BLM's Challis Field Office; the Idaho Department of Fish and Game, Salmon Region; the National Marine Fisheries Service; the U.S. Forest Service; and many local merchants and businesses.

INTERPRETERS MAKE THEIR MARK AT MONTANA'S POMPEYS PILLAR

Captain William Clark's inscription on Pompeys Pillar National Monument's sandstone butte is still the only physical evidence of the famed Lewis and Clark Expedition that remains along the explorers' actual route. In 2011 more than 500 youths from across Montana and northern Wyoming participated in interpretive and environmental education programs at the monument. Here, along the Lewis and Clark National Historic Trail, professional interpreters, volunteers, and BLM student employees share their knowledge of native plants, Native American culture and history, wildlife identification, local and regional geology, and Yellowstone County history, including the Lewis and Clark Expedition. In keeping with the historical context of the site, they also demonstrate surveying and mapping methods and the use of historical weapons.

YOUNG NATIVE AMERICANS CREATE A "RAINBOW SNAKE" AND YOUTH ART EXHIBIT IN WYOMING

In 2011 the BLM's National Historic Trails Interpretive Center partnered with a teacher and fourth- and fifth-graders from Oregon Trail Elementary School in Casper, Wyoming, to present a temporary exhibit entitled "The Rainbow Snake." The exhibit interprets the Native American history and historic trails of Wyoming's Bighorn and Casper Mountains and the sacred Black Hills of South Dakota.

Wyoming Indian High School, located on the Wind River Indian Reservation, partnered with the trails center to display sculptures and watercolors representing animals and insects in



a temporary exhibit and art show, "Reservation Creations: A Native American Youth Art Exhibit." By selling their artwork through the National Historic Trails Center Foundation, a trails center partner, students learned about the art business and received 90 percent of the proceeds from every art piece sold. At the exhibit's closing, the trails center presented a public program that featured Native American youth dancers and drummers to an audience of approximately 90 visitors.

OREGON TRAIL TENDERS "RUN FOR THE RUTS"

Trail Tenders, Inc., is a nonprofit volunteer group composed primarily of Baker County, Oregon, residents. A dedicated partner with the BLM in operating the National Historic Oregon Trail Interpretive Center (NHOTIC), Trail Tenders promoted awareness of the center's resources and opportunities for physical activities by sponsoring a National Trails Day event in 2011. Special interpretive programming was featured in addition to Run for the Ruts, an inaugural 5K race along the NHOTIC trail system, which drew 80 runners and a total of 430 visitors. Funding from several local sponsors and the assistance of local volunteers helped make the event a success.

BLM-EASTERN STATES SEES TRAIL IMPROVEMENTS IN TWO STATES

To create a more visitor-friendly experience, the BLM's Meadowood Special Recreation Management Area in Northern Virginia reorganized its trail system by creating new trails, combining others, adding a few loop trails, and renaming some existing trails. New trail markers and signage were installed to reflect these trail improvements. With volunteer assistance, trail sign improvements were also completed at Douglas Point Special Recreation Management Area along the Potomac River in Charles County, Maryland.

WILDERNESS ADVENTURES ENGAGE NEW MEXICO YOUTH

Building knowledge through wilderness adventure is the goal at Cottonwood Gulch, an outdoors camp serving youth from across the country. The camp, located near the BLM's El Malpais National Conservation Area, was the product of a partnership between the BLM and the Cottonwood Gulch Foundation. With a shared goal of engaging youth in outdoor recreation on public lands, the partnership delivered NCA-guided programs, field trips, and interpretive programs for 266 youth in 2011 alone. The demand for BLM-provided programs was so high that activities expanded to areas surrounding the NCA as well.



Take It Outside!

THE BLM'S

TAKE IT OUTSIDE! initiative

is an integral component of the larger BLM

Youth Program. The

BLM continues

to strengthen

connections

between Take

It Outside!

and Let's

Move Outside,

the outdoor

component of

the First Lady's

Let's Move!

initiative to end

childhood obesity.

Take It Outside! activities

bring children and their families

outdoors and connect them to the

natural world, in support of the four pillars of Let's

Move Outside—health, family, fun, and stewardship.

"Learning traditional skills was perhaps the biggest hit of the camp, but the [participants] also particularly enjoyed how the [program] integrated modern ecology with traditional life ways."

BLM tribal coordinator

MONTANA/IDAHO YOUTHS BRIDGE THE DIVIDE BETWEEN SCIENCE AND TRADITION

With a focus on the sagebrush-steppe ecosystem, Bridging the Divide (BTD) continued its unique blend of education—teaching Native American youth about modern ecology of ecosystems and landscapes



"The senses, being explorers of the world, open the way to knowledge."

Maria Montessori, Italian educator

while exposing them to time-honored traditions and practices through their tribal elders. In 2011 students supplemented their scientific studies by learning about and practicing skills used by their ancestors to harvest, store, and prepare the roots of the bitterroot, a critical food source for previous generations. Students also become acquainted with careers in cultural and natural resource management. Designed as a summer school course for tribal high school students, the BTD program includes 5 weeks of classroom learning at Shoshone-Bannock Junior/Senior High School in Fort Hall, Idaho, followed by a weeklong camp at Birch Creek Outdoor Education Center near Dillon, Montana.



ADVENTUROUS STUDENTS STUDY CALIFORNIA'S HUMBOLDT BAY BY KAYAK

In partnership with the BLM, East High School in Fortuna, California, developed a course that takes students on a 3-hour kayaking tour and teaches them along the way about Humboldt Bay's coastline and ecosystem.

"Dear BLM, I very much enjoyed our class's kayaking trip. Thank you so much! We had a lot of fun. It was scary at first but it ended up so much fun. P.S. I learned how to kayak backwards and turn around."

Fifth-grade participant

In 2011 the BLM partnered with Humboats Kayak Adventures of Eureka, California, to lead the tour, during which more than 60 students of all ages paddled tandem and single kayaks around Woodley Island while learning about the natural and cultural history of the bay. At one of the many stops along the tour, students were surprised to learn that what at first glance appeared to be hundreds of dead crabs was actually the leavings of crabs that had molted in that location. Humboldt Bay proved to be a perfect environment for the students to learn about ocean life, the public lands, and kayaking.



*“ ‘We want to fish more!’
This was a comment I heard
several times during the afternoon of
the 2011 Ice Fishing Clinic held at Silver
Lake. Some of the kids had yet to land one
of the big rainbow trout, and those that
had, just wanted to relive the excitement.
I had promised their parents to have
them home by dinnertime but they
just wanted to fish!’”*

WISE employee

KIDS' CLINIC WOWS YOUNG ICE-FISHERS AT ALASKA'S SILVER LAKE

Kids learned ice-fishing techniques, lure and bait selection and presentation, knot tying, and ice safety at Silver Lake in south-central Alaska in 2011 during the Kids' Ice Fishing Clinic. The event was sponsored by the BLM and the Wrangell Institute for Science and Environment (WISE). Employees from the BLM, WISE, and the Alaska Department of Fish and Game, as well as community volunteers, were on hand to teach the children, instructing them as well in the proper use of ice-fishing equipment such as skimmers, augers, and portable ice houses. Submersible video cameras enabled participants to observe rainbow trout behavior underwater.

SUMMER SCIENCE CAMPERS ARE AWED BY UTAH'S EARTH, WATER, AND SKY

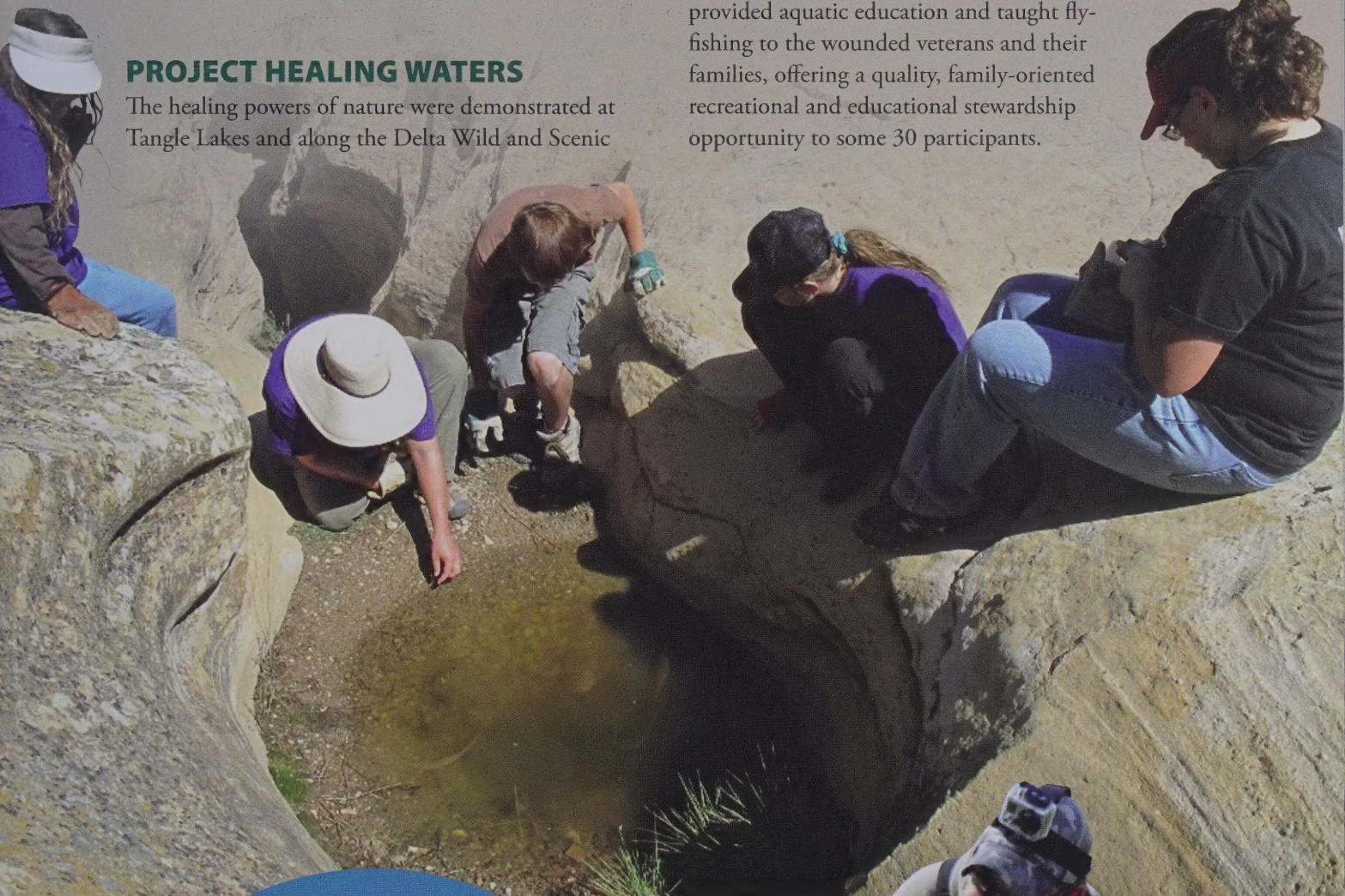
Utah's Four Corners School of Outdoor Education (FCS) conducted a 2011 summer camp for students ages 12–18, opening up new worlds in astronomy, earth science, geology, desert hydrology, and public lands management during 4 days of outdoor learning along the San Juan River. Campers trekked between walls of red sandstone and shale, past an extinct volcano, and into a deep canyon carved through folded limestone layers. Along the way, students learned to interpret the signature landforms, rocks, and

fossils of southeast Utah, marked out a scaled timeline along the beach to help understand the magnitude of geologic time, built a clay model of the limestone canyon, and constructed and operated a stream table model of the San Juan River on the sandy beach. Students retired each night beneath brilliant, starry skies, after observing and studying the firmament with a telescope.

PROJECT HEALING WATERS

The healing powers of nature were demonstrated at Tangle Lakes and along the Delta Wild and Scenic

River in Alaska in FY 2011. The BLM-Glennallen Field Office teamed up with the veterans group Project Healing Waters to offer a 3-day aquatic camp to wounded veterans and their families. Project Healing Waters has been helping disabled active-duty personnel and veterans overcome the obstacles associated with their military-service-related disabilities. The camp provided aquatic education and taught fly-fishing to the wounded veterans and their families, offering a quality, family-oriented recreational and educational stewardship opportunity to some 30 participants.



*"Looking at
Saturn was AWESOME!"
"I loved looking through the
telescope, and the rapids."
"I gained some knowledge
about the river, Native
Americans, and outer space, as
well as some rafting experience."*

FCS Summer Science campers



Learning Through Service

EACH YEAR, MORE than 30,000 BLM

volunteers restore and improve natural and cultural resources on the public lands. Invaluable assets to the BLM in accomplishing its mission, volunteers enjoy a sense of having contributed to the greater good in addition to benefiting from physical exercise and on-the-job learning. Volunteers may be individuals, families, groups, or partners, and they are needed for both short-range projects and more prolonged ventures.

The BLM is actively working to promote the integration of service projects into classroom education as another way to involve youth in the management and stewardship of public lands. Service learning allows young people to build character as they work with members of their school and community, and opportunities exist for individual students as well as for groups of students and entire schools.

Building bat houses in Idaho, blocking off a smuggling route in Arizona, and planting native riparian seedlings along a Wyoming creek were just a few of the many ways that members of the public participated in 2011 volunteer and service-learning projects to benefit BLM public lands.

ARIZONA VOLUNTEERS TACKLE WALLS, WINDOWS, AND WEEDS

The 640-acre Ninemile Ranch near Safford, Arizona, was traded to the BLM in 2004 to provide access to the nearby Dos Cabezas Wilderness. Built in the early 20th century, the ranch greatly benefited in 2011 from the restoration efforts of Boy Scouts, college faculty, and other volunteers who came to appreciate the ranch's history. Volunteers removed scrap metal, rotting wood, and other debris from the barn; scraped and painted window frames; reconstructed a block wall around the ranch house; and removed weeds to create fire-defensible space around both structures. All of the metal that was removed (more than a ton) was taken to Safford for recycling.



EASTERN VOLUNTEERS POLISH A “DIAMOND IN THE ROUGH”

To celebrate 2011 Invasive Plant Removal Day in Virginia, Earth Sangha, a local ecological organization guided by Buddhist principles, organized volunteers to enhance the public lands at the BLM’s Meadowood Special Recreation Management Area in Lorton, Virginia. Volunteers planted a variety of native plant species to help crowd out invasive Japanese stilt grass. Meadowood’s many shady trails meander through more than 600 wooded acres that feature chestnut trees, white and northern red oak, bitternut hickory, and sweet gum.

“FOOT SOLDIERS” AND “FLOATERS” CLEAN UP MONTANA’S MADISON RIVER

In 2011 the Madison-Gallatin chapter of Trout Unlimited rallied two dozen volunteers from diverse organizations to act as “foot soldiers” and “floaters” in the removal of trash from the Madison River in western Montana. From the river and riverbank, volunteers, some working with canine companions, grabbed everything from beer bottles to float tubes. The annual community event has been held for several years, noticeably reducing the river’s trash load each year.

YOUNG CADETS PERFORM COMMUNITY SERVICE IN DILLON

Members of the Montana Youth Challenge Academy, a program for at-risk youth ages 15–19, contributed 40 hours of community service per person to the BLM in 2011. Cadets cleaned out and maintained a ditch to the Pipe Organ Wetland, rolled and removed a nonfunctioning fence that threatened local wildlife, and helped to pack up the library at the Dillon Field Office in preparation for new paint and carpeting. BLM staff guided the cadets and taught them about opportunities and careers in resource management.

“CLOVIS QUEST” UNCOVERS CLUES TO AN ANCIENT CIVILIZATION’S ARRIVAL IN EASTERN OREGON

The BLM’s archaeological team is determined to find relics that can help answer a question still fueling worldwide debate: When did the Clovis Paleo-Indian culture arrive in North America? In 2011 volunteers combed the high desert in the Burns area of Oregon for clues to this ancient people, who created and used distinctive weaponry and tools roughly 13,000 years ago (sometime, it is thought, during the late



Pleistocene or early Holocene era). Organized through the efforts of a BLM seasonal archaeological technician, the volunteers came from the Oregon Archaeological Society, the University of Oregon Field School, and local communities.

2011 SPRING BREAK-ERS TACKLE RESTORATION PROJECTS IN SOUTHEASTERN UTAH

Plateau Restoration is a nonprofit conservation education and service organization devoted to the native habitats of the Colorado Plateau. Its ecosystem health projects drew 52 university students in 2011, from as far away as Keene, New Hampshire, and Fairbanks, Alaska. The young people removed Russian thistle and other invasive species from BLM

campgrounds and helped establish native plants in the cleared areas. All participants received several hours of instruction in natural resource management topics, including invasive species control, recreation values and impacts, restoration principles, the role of the BLM in federal land management, and the benefits of resource management careers.

NATIONAL PUBLIC LANDS DAY: HELPING HANDS FOR AMERICA'S LANDS

On Saturday, September 24, 2011, thousands of BLM volunteers participated in more than 150 National Public Lands Day (NPLD) projects in 17 states from Alaska to Florida. For service-minded individuals and groups, the annual celebration of NPLD, the nation's foremost workday on behalf of our nation's public lands, offered an opportunity to support America by enhancing its natural and cultural resources. BLM hosted an extraordinary variety of work and educational activities, ranging from native seed collection and fuel break maintenance to river cleanups and accessible-facility construction.

In response to President Obama's America's Great Outdoors initiative and the First Lady's Let's Move Outside call to action, NPLD 2011 emphasized recreation and health with the message "Public Lands = Public Health." Site coordinators were encouraged to integrate healthy recreational activities into their NPLD projects and did so in diverse ways, offering hiking, biking, rock climbing, and rafting activities in conjunction with their work.

THE BEST OF THE BEST ARE SPOTLIGHTED IN WASHINGTON, DC

The BLM recognizes exceptional volunteers, volunteer groups, and BLM volunteer leaders at its "Making a Difference" National Volunteer Awards program, now in its 17th year. Seven individuals and couples and one group were honored in 2011; one couple was acknowledged in the lifetime achievement category, which pays tribute to long-term volunteers. A BLM employee winner was also acknowledged.



“On National Public Lands Day, we take time to appreciate our parks, national forests, wildlife refuges, and other public spaces, and we recommit to protecting and restoring them for future generations . . . By joining in this legacy of conservation, Americans young and old protect not only our lands, but also the promise that future generations will be able to carry forward the spirit of adventure that lies at the heart of our Nation.”

President Barack Obama,
National Public Lands Day 2011 proclamation





CAREER PATHWAYS

With youth employment remaining a high-priority goal for the Secretary of the Interior in 2011, the BLM took important steps to create and institutionalize career pathways throughout the bureau and to ensure that those pathways would be clear and made available to youth from all backgrounds. The BLM engaged more than 3,800 youth in mission work in 2011, including youth paid by the BLM, such as youth corps members, who were hired through partners. Oregon's Jefferson Conservation Corps received one of the prestigious Partners in Conservation awards from the Secretary in 2011, shining a spotlight on the benefits of youth corps organizations to the BLM, to young people, and to the local communities from which they are recruited.



"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value."

Theodore Roosevelt, 26th U.S. President

Youth Gain ACCESS TO CAREER PATHWAYS through Internships

In 2011 interns hired through universities and other BLM partner organizations, as well as through federal student employment programs, contributed to a wide range of resource programs throughout the BLM. Gaining valuable hands-on experience in their fields of study, these young people brought remarkable enthusiasm and dedication to their jobs. BLM offices received funding for salary, recruitment and retention expenses, training costs, and administrative costs related to new youth hires through the Student Career Experience Program (SCEP), the Student Temporary Employment Program (STEP), and the Presidential Management Fellows program.

Recruitment of YOUTH FROM ALL BACKGROUNDS Is Key

The BLM expanded its national recruitment efforts through career fairs and conferences at organizations associated with the Historically Black Colleges and Universities Program, Hispanic-Serving Institutions Program, and Tribal Colleges and Universities Program.

Students with academic majors related to the BLM's critical occupations were a particular target of these outreach efforts.

Creating career pathways for youth from diverse backgrounds remained a BLM priority at both the national and state levels in 2011. Funding from youth programs and Executive Order programs supported pilot efforts in Arizona and Colorado, which created natural resources education and employment opportunities for students from a variety of backgrounds.

The BLM LEADS THE EFFORT To Create a 21st-Century Workforce

In February 2011 *America's Great Outdoors: A Promise to Future Generations* was issued. This report to the President reflects input from listening sessions held throughout the nation, more than 20 of which were organized by young people to focus on issues of particular importance to them. The report makes recommendations about improving opportunities for youth to work and volunteer in America's Great Outdoors.

The BLM's strategy for the National Landscape Conservation System was officially released on September 30, 2011. This document also recognizes the importance of engaging young people and recruiting and retaining well-trained youth from diverse backgrounds in entry-level careers. As the following pages attest, the BLM is already well on the way to creating a 21st-century workforce that reflects the diversity of the nation's population.



Youth Employment

WYOMING TRIBAL YOUTH GET TO KNOW THEIR BLM NEIGHBORS

During the summer of 2011, four students from the Wind River Indian Reservation in west-central Wyoming completed many projects for the Casper and Lander field offices. They cleaned up dispersed campsites, constructed fencing around riparian areas and old mine shafts, and collected seeds for the national Seeds of

Success program. As STEP hires, they learned about the multiple responsibilities of a federal natural resource agency and potential career opportunities while helping improve the public lands and teaching BLM staff about indigenous culture.



“Not only did we enjoy working with them, but we learned from them. They shared many aspects of their culture and lives with us.”

BLM forester

YOUTH CORPS MEMBERS ACQUIRE EXPERTISE AND PURSUE DREAMS IN OREGON

Winner of a prestigious Partners in Conservation award in 2011, the BLM's partnership with the Jefferson Conservation Corps highlighted the benefits that partnerships can bring to economically struggling areas. Youth corps members received natural resource management training and learned marketable skills from BLM staff and other partners while removing noxious weeds, restoring streams and renovating watersheds, pruning trees and reducing fuels, and maintaining BLM recreation facilities and trails. The goals of the partnership are to provide sustainable employment for local young people and to encourage their pursuit of careers in natural resource management, the timber industry, or business.

BUILDING A MOUNTAIN BIKE TRAIL BUILDS SKILLS FOR OREGON YOUTHS

Woape is a nonprofit organization providing community- and occupation-based instruction in indoor and outdoor classrooms to support the spiritual, emotional, mental, and physical development of local youths. Under the direction of the International Mountain Biking Association and trail specialists from the BLM's Salem District, 24 Woape youth

“Success is not just creating this program. Anyone could do that. It's not about counting the widgets of how many youth we hired... Success is taking a vested interest in these amazing youth and helping them to achieve their dreams... It is about the partnerships that help these youth [and help] the BLM accomplish its mission.”

BLM Oregon sponsor,
Jefferson Conservation Corps

"Conservation is a positive exercise of skill and insight, not merely a negative exercise of abstinence and caution."

Aldo Leopold, American conservationist and author

crew participants were employed to work on the new Sandy Ridge Mountain Bike Trail System from May to September 2011. In a companion effort, the Salem District leveraged youth program funds with a grant from Nike, Inc., to develop and implement a youth-focused mountain biking program, administered by Woape's new youth development center.

PROJECT PARTICIPANTS HELP WILDLIFE IN NEW MEXICO

Wildlife species in southeastern New Mexico are receiving a helping hand thanks to the Youth Wildlife Waters project organized by the BLM's Carlsbad Field Office. In 2011 youth inspected the area's wildlife water guzzlers

for needed repairs, cleaned out drinking troughs, and recorded the amount of water in storage tanks. The youth also made minor repairs to enclosure fences. Such hands-on activities helped participants understand how wildlife can benefit from habitat improvement affecting food, water, and cover.

BOOTSTRAPS PROGRAM RESPONDS TO MULTIPLE NEEDS IN NEVADA

Bootstraps is a youth work program conducted by the University of Nevada, Reno Cooperative Extension, to assist at-risk youth. The program aims to instill a strong work ethic in participants and to expand their educational opportunities and life skills. Every year the program selects 12–18 young people to receive a combination of classroom training and field experience. Youth participants in 2011 assisted the BLM Battle Mountain District by completing wildlife habitat restoration projects, including enhancement of sage-grouse nesting and brood-rearing habitat. Bootstraps crew members also worked on inventory, monitoring, and treatment of invasive weeds.



YOUTH CORPS MEMBERS PROTECT NATIVE PLANTS AND OTHER RESOURCES IN MONTANA

Montana Conservation Corps (MCC) youth conducted a variety of resource stewardship projects in 2011. The Butte Field Office hired an MCC crew to set up a wildlife exclosure fence around a unique population of upland Scouler's willows on 30 acres in Lewis and Clark County. The crew spent 2 weeks installing 8-foot-tall plastic mesh fencing with 14-foot metal posts around the willow population to protect new growth from browsing by wildlife and livestock. Other crews in Butte helped control noxious weeds and maintained a hiking trail to Spokane Bay Recreation Site, near Hauser Lake.

In the Dillon Field Office area MCC crews conducted trail maintenance on approximately 2 miles of the Tipton-Winslow Trail in the Centennial Mountains. MCC crews assisting the Missoula Field Office helped stabilize one of the historic cabins in Garnet Ghost Town and assisted with local trail maintenance.

YOUTH HIRES TAKE THE HIGH ROAD IN IDAHO

The BLM Salmon Field Office hired 15 young people to install signage on newly opened routes, rehabilitate closed routes, and inventory illegal, user-created routes in the area. The youth crew completed work for the entire north half of the field office's travel management planning area in one season. Crew members also attended training sessions about the

unique cultural and natural resources on public lands in central Idaho, a full-day Leave No Trace program, and a job seminar hosted by the field office's outdoor recreation planner. This opportunity for youth to learn skills relevant to public land management was made possible by a BLM partnership with the Student Conservation Association and the U.S Forest Service Salmon-Challis National Forest.

CORPS MEMBERS BUILD TRAILS AND RESTORE HABITAT IN COLORADO

Hikers on the newly constructed trails in Colorado's Vista Grande Community Recreation Area owe their enjoyment, in part, to youth crews from the Southwest Conservation Corps (SCC) who worked on trail construction, and to a partnership between the BLM and the community of Saguache. SCC crew members were busy in Penitente Canyon as well, building and maintaining or improving trails. A young recreation assistant with a background in trails was hired for the 2011 summer season to serve as a liaison for both projects and to assist with preplanning and trail layout and design.

Gunnison sage-grouse, deer, elk, and desert bighorn sheep will benefit from other 2011 projects in which SCC crews thinned pinyon-juniper stands and mountain shrubs and seeded native forbs and grasses. Funding for this and other wildlife habitat improvement projects in Dolores, San Miguel, and Montrose counties was provided through the American Recovery and Reinvestment Act. Tamarisk,



"I led the Dolores River Restoration Crew, removing tamarisk on sections of the Dolores River and its tributaries. We have been working in Disappointment Valley for 30 days, cutting our way through acres of tamarisk. It is tough but satisfying work. As the season draws to a close, I will remember the laughs and the sweat and the blood, but mostly I will remember Disappointment Valley."

2011 SCC member

by contrast, was on the receiving end of removal efforts by SCC crews and youth from the Western Colorado Conservation Corps, who cleared this invasive plant species as part of the Dolores River Restoration Project. The partnership includes The Nature Conservancy and The Walton Family Foundation.

INTERNS WORK ON THE WILD SIDE IN CALIFORNIA

In 2011 five interns from the Student Conservation Association learned the basic principles of wildlife habitat, wilderness ecology, and wildlands restoration within the Tule Mountain Wilderness Study Area (WSA)

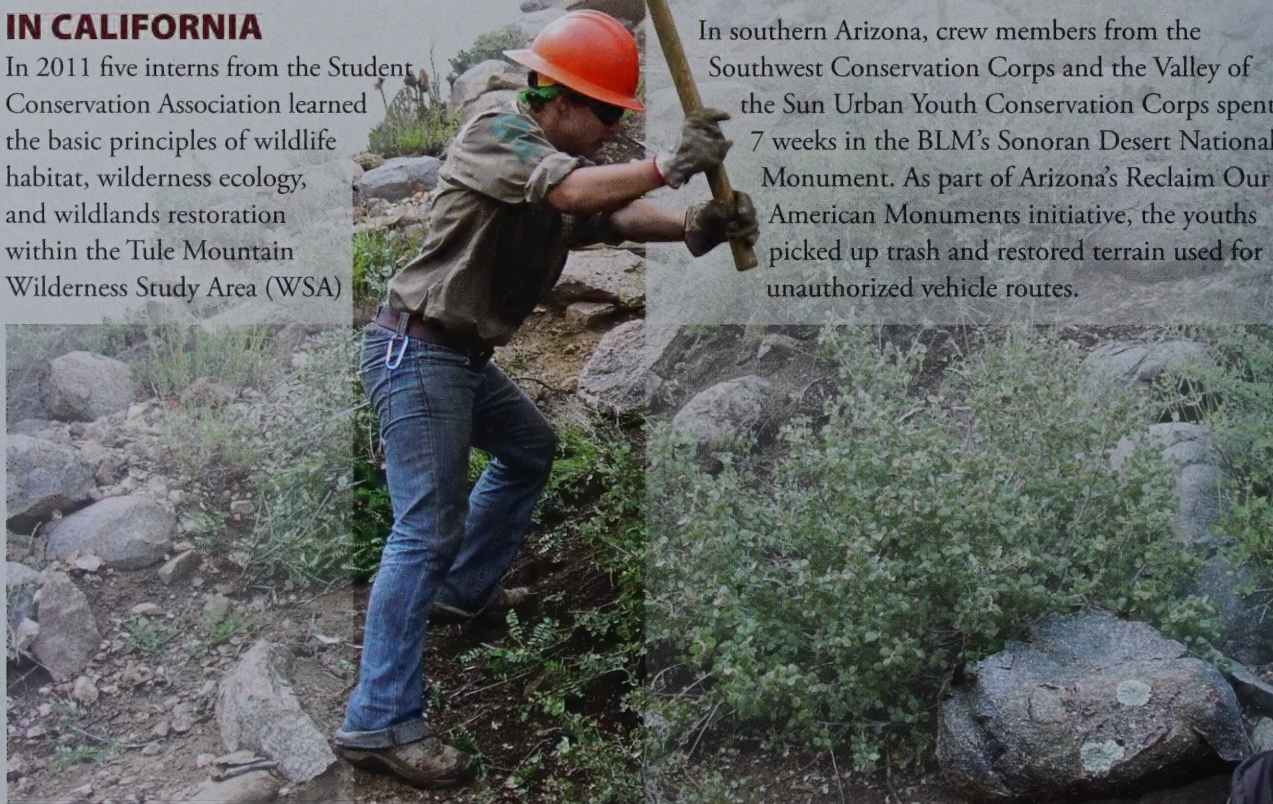
in California. Their work centered on riparian and wildlife restoration within the WSA.

Using a variety of hand saws, including large crosscuts, they cleaned up an area where a large amount of unauthorized firewood cutting had occurred. The wood that the interns cut was then provided to needy citizens for fuel. The interns also posted signs around four other WSAs to prevent encroachment and impacts in those areas.

ARIZONA YOUTHS CONSTRUCT TRAILS AND RECLAIM MONUMENTS

During 11 weeks in spring 2011, youth from the Coconino Rural Environment Corps (CREC) helped construct the 11-mile Foothills Rim Trail near Kingman, Arizona. The trail is within Cerbat Foothills Recreation Area, which is cooperatively managed by the City of Kingman, the Arizona Game and Fish Department, and the BLM's Kingman Field Office. With funding from the American Recovery and Reinvestment Act, CREC crews removed and dispersed brush and performed trail tread work according to BLM specifications. They accomplished similar work on 3 miles of the nearby Cherum Peak Trail as well.

In southern Arizona, crew members from the Southwest Conservation Corps and the Valley of the Sun Urban Youth Conservation Corps spent 7 weeks in the BLM's Sonoran Desert National Monument. As part of Arizona's Reclaim Our American Monuments initiative, the youths picked up trash and restored terrain used for unauthorized vehicle routes.



Internships and Field Schools: Real-World Experiences

STUDENTS ASSIST WITH CURATING ARCHAEOLOGY COLLECTIONS IN ALASKA

The next generation of Alaskan archaeologists got hands-on experience in the course of bringing the BLM's archaeology collections up to modern standards for curation and preservation. The student assistants were trained and supervised by a professional archaeological collections manager and a curator/professor. Work was performed under the auspices of the Archaeology Department of the University of Alaska Museum, which curates BLM archaeology collections from all over the state.

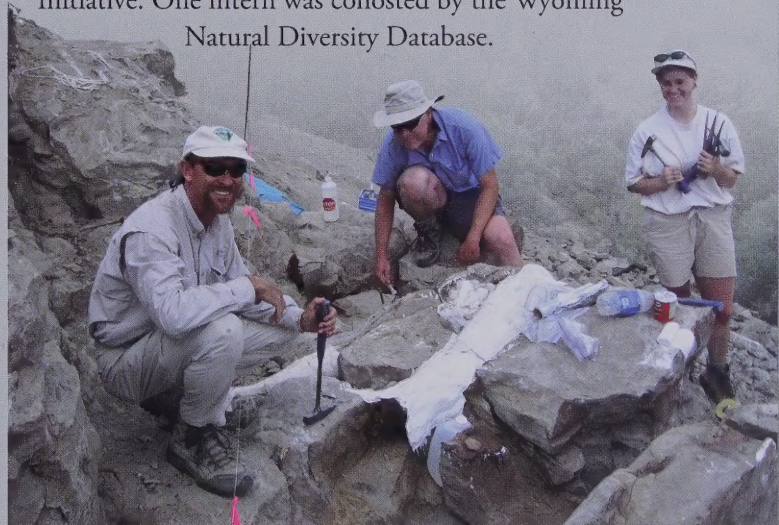
TRIBAL YOUTH GAIN HANDS-ON EXPERIENCE IN ARIZONA

Each year, as part of BLM-Arizona's Youth Initiative, the American Indian Science and Engineering Society (AISES) administers a 10-week program to foster

diversity within the BLM and to provide tribal youth with hands-on work experience. In 2011 two AISES interns helped the BLM construct a vehicle barrier and cattle guards in the Agua Fria National Monument to protect sensitive riparian vegetation. They also conducted biological monitoring and surveys—notably, for the western yellow-billed cuckoo, a candidate species for listing as threatened or endangered.

PLANT CONSERVATION INTERNS CONTRIBUTE DIVERSE SKILLS IN WYOMING

Nearly 30 interns from the Chicago Botanic Garden's Conservation and Land Management Internship Program contributed their expertise to BLM-Wyoming during 2011. Programs ranged from plant conservation and collection for the Seeds of Success program, to threatened and endangered species and range management, to the Wyoming Landscape Conservation Initiative. One intern was cohosted by the Wyoming Natural Diversity Database.



STUDENTS TRACK DINOSAURS IN UTAH

Many school groups that visited the Cleveland-Lloyd Dinosaur Quarry National Natural Landmark in 2011 had the pleasure of taking tours led by interpretive guides who were themselves students—more specifically, student interns from GeoCorps and the Student Conservation Association. The interns led younger children along a groomed trail to view a dinosaur bone embedded in a rocky ledge. Older children were taken on a more arduous tour up a nearby hillside, to observe multiple paleontological and geological features.



ARCHAEOLOGY STUDENTS EXPLORE THE PAST IN NEW MEXICO

Archaeology students from Washington State University conducted a field inventory of archaeological resources within the Mesita Blanca and Eagle Peak wilderness study areas in 2011. Their work was part of ongoing research on Chacoan “Great House” community sites in the area. The effort is also aimed at ascertaining the role this region played in filtering and transmitting traits between the Mogollon and Anasazi cultures, two of the Southwest’s major prehistoric cultures. The project has reached out to tribal groups to ensure that their perspectives and insights are incorporated.

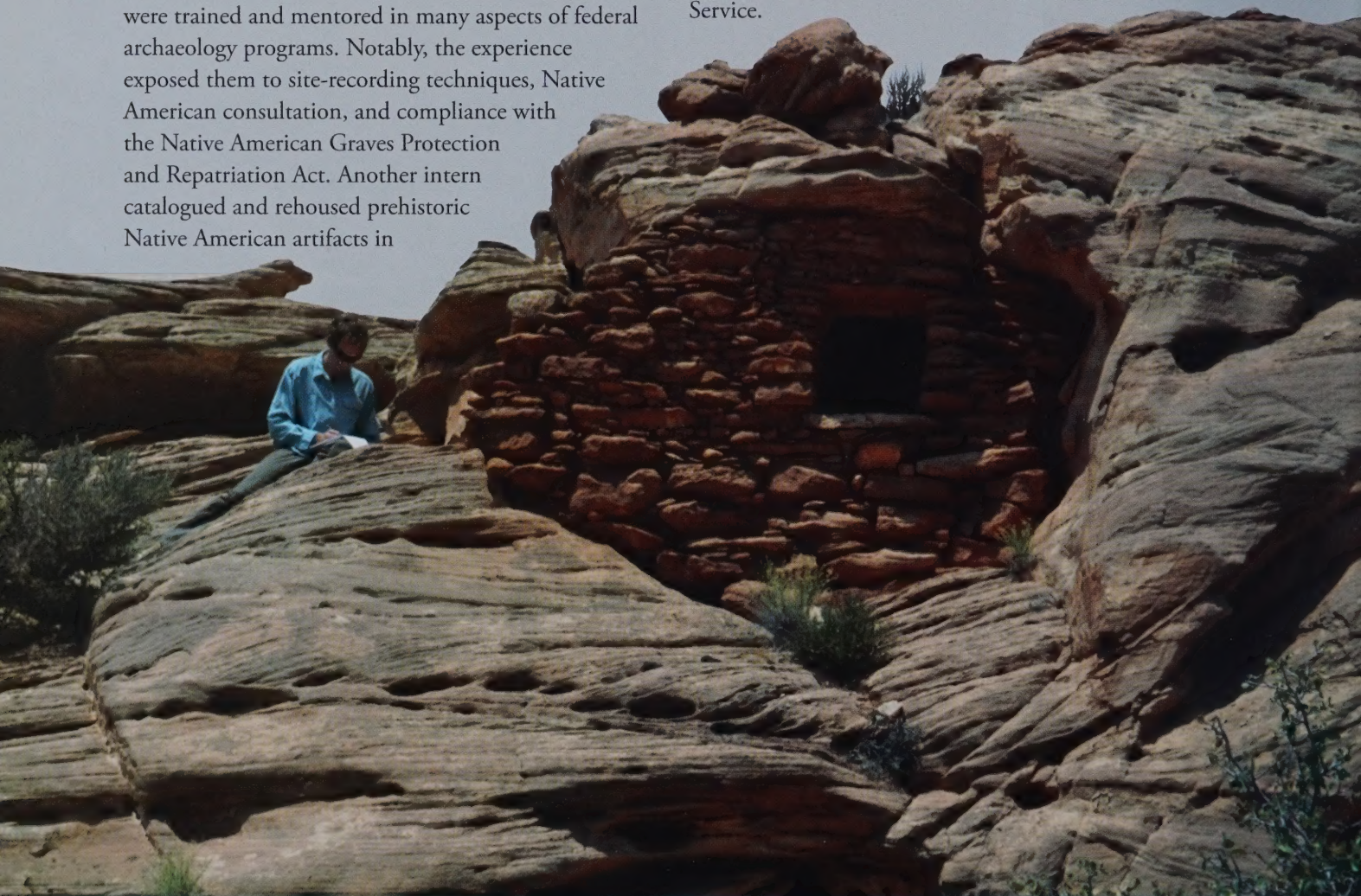
INTERNS CONTRIBUTE TO A CULTURAL RESOURCES PROGRAM IN UTAH

Several students majoring in archaeology became cultural resource program interns with the BLM during 2011. The students, who hailed from Utah State University and Western Washington University, were trained and mentored in many aspects of federal archaeology programs. Notably, the experience exposed them to site-recording techniques, Native American consultation, and compliance with the Native American Graves Protection and Repatriation Act. Another intern catalogued and rehoused prehistoric Native American artifacts in

compliance with Department of the Interior museum standards. Employed through the BLM’s Student Temporary Employment Program (STEP), this intern learned to use the Interior Collections Management System cataloging database and performed data entry.

YOUTH EMPLOYEES ARE WELCOMED TO IDAHO’S CRATERS OF THE MOON AND INVITED TO THE UNDERGROUND

GeoCorps youth were hired in 2011 to complete a cave geodatabase for BLM’s Shoshone Field Office. The threat of white-nose syndrome in bat populations, and policies and procedures for managing the threat, were other focus areas. Meanwhile, the interns also implemented cave management programs alongside National Speleological Society volunteers at Craters of the Moon National Monument. Along with the GeoCorps members, a young BLM seasonal recreation technician led cave tours at the monument, which is jointly managed by the BLM and the National Park Service.





STUDENTS EXCAVATE ROCK SHELTERS IN COLORADO

An Archaic-period rock shelter at Lawhead Gulch, located near a former big-game river crossing, was the scene of modern-day instruction about excavation and recording techniques during the summer of 2011. Local volunteers and college students from Western Wyoming College participated, continuing a tradition of summer excavations (now several years in the making) in Gunnison Gorge National Conservation Area. Archaic-period projectile points and petroglyphs, along with Fremont-style basketry, are helping to paint a picture of prehistoric life in the region.

BIOLOGY STUDENTS CONDUCT FISHERIES RESEARCH IN WYOMING

What students from Brigham Young University didn't know about the northern leatherside chub (a small, stream-dwelling fish), they learned by capturing, marking, and releasing more than 300 of the fish in 2011. Graduates and undergraduates alike participated in this long-term fisheries research project sponsored by the BLM's Rock Springs Field Office. The study aims to determine the relationship among land use patterns, stream habitat characteristics, and occurrence and

abundance of the northern leatherside chub. Students have assisted in every phase of the project and, in 2011, managed data from three different stream studies.

YOUTH INTERNS MANAGE INVASIVE SPECIES INFORMATION IN WISCONSIN

Two youths armed with GPS (Global Positioning System) units clamored over islands in the Milwaukee River and across lands in southeastern Wisconsin, downloading information about invasive species and importing it into the BLM's Northeastern States Field Office. There the information was merged with GIS (Geographic Information Systems) data to create spatial information about these populations using the application known as NISIMS (the National Invasive Species Information Management System). These young employees, hired in 2011 to help implement NISIMS in the BLM's Eastern States Office, collected important data that was then shared with conservation groups and uploaded to the NISIMS national database.

BLM HELPS TO CREATE CAREER PATHWAYS FOR ALASKA NATIVES

The Alaska Native Science & Engineering Program (ANSEP) increases university recruitment and retention rates through hands-on middle and high school outreach initiatives, rigorous summer bridging programs, focused academic learning communities, organized student cohorts, networks of peer and professional mentors, community-based learning, professional internships, and undergraduate and graduate research projects. Three ANSEP students worked with BLM staff at the Anchorage District Office and Anchorage Field Office in 2011. One student worked with a BLM wildlife biologist on breeding-bird surveys, while another assisted with mine inspections and compliance checks. A third ANSEP student, already enrolled in college, spent 2½ months during the summer collecting stream habitat data on the Unalakleet River.

BLM-PHOENIX WORKS TO EXPAND CAREER PATHWAYS

A pilot program sponsored by the BLM's Phoenix District expands workforce diversity by creating

education and employment opportunities for urban youth. As part of Hands on the Land programs in the Phoenix Union High School District, students learned about riparian ecology, fire science, and other land management topics in the classroom and outdoors, working with numerous local and national partners of the BLM.

In 2011 not only did students in the River Pathways program receive instruction in “multiple indicator monitoring,” but some of them also earned the newly created Certificate in Environmental and Natural Resources Stewardship. Several other students completed a wildland firefighting course, earning certifications that enabled them to be employed by the BLM as STEP hires. One intern was hired to assist with vegetation surveys at Agua Fria National Monument.

The Phoenix District also collaborated with the U.S. Department of Labor and its Maricopa County, Phoenix, and Yavapai County workforce investment boards to create a national pilot program to hire and train underprivileged urban youth. Several other BLM states, including Colorado and California, are working with minority-serving institutions and other partners to replicate this model program.

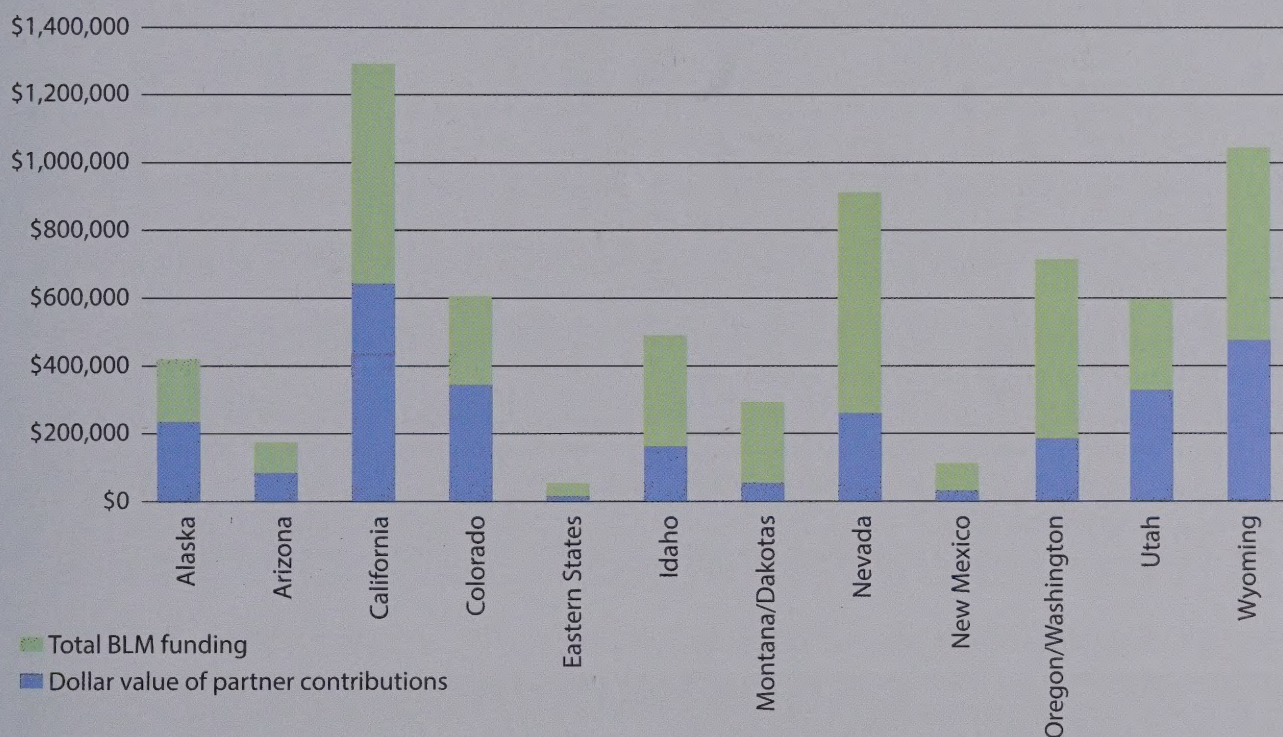


APPENDIX

The BLM Education Program charts and graphs in this report reflect data submitted by BLM state and field offices for only those FY 2011 projects and

programs that engaged or educated youth up to age 25. They do not reflect the entire scope of education and interpretation activities in which BLM offices are engaged.

FY 2011 BLM Education Program Costs and Funding Sources, by State



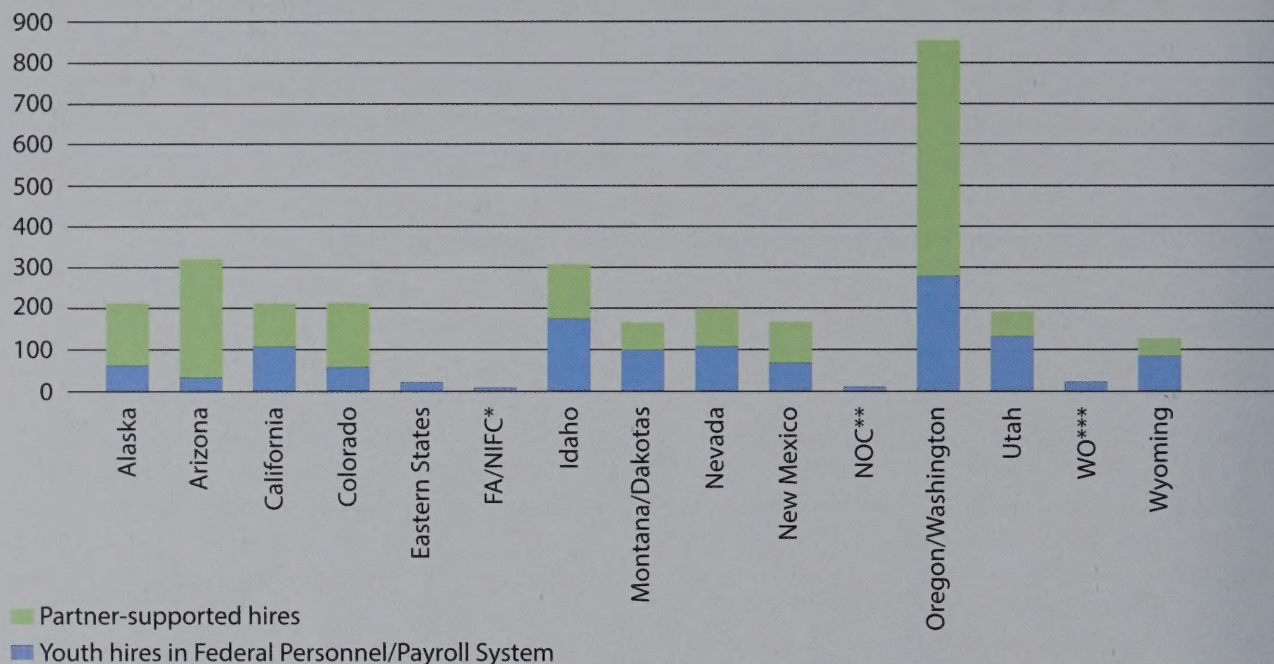
FY 2011 BLM HOL and TIO Programs, by State*

State	Number of HOL sites reporting	Number of HOL participants	Number of TIO event reports received	Number of TIO participants
Alaska	2	9,246	6	2,869
Arizona	3	278	4	62
California	10	5,639	11	2,629
Colorado	0	0	10	279
Eastern States	1	500	9	1,647
Idaho	3	1,243	6	1,523
Montana/Dakotas	1	125	5	480
Nevada	2	9,590	7	2,942
New Mexico	1	550	2	1,394
Oregon/Washington	6	13,377	44	8,333
Utah	2	1,476	8	3,155
Wyoming	1	21	22	1,889
Totals	32	42,045	134	27,202

HOL = Hands on the Land, TIO = Take It Outside!

*Reports were not received for all HOL sites or TIO events.

Youth Ages 15–25 Hired by BLM States and Centers in FY 2011¹



¹ Based on data from the Federal Personnel/Payroll System and on quarterly reports provided by the states during FY 2011

* FA/NIFC = Fire & Aviation/ National Interagency Fire Center

** NOC = National Operations Center

*** WO = Washington Office of the BLM, including the National Training Center

FY 2011 BLM Education Program Statistics, by State

State	Number of youth participants (excluding hires)	Number of adult participants	Number of partner groups involved	Value of partner contributions (\$ cash/in-kind)	Total BLM funding (\$)	Total program cost (\$)
Alaska	12,305	2,378	42	236,226	182,656	418,882
Arizona	942	250	49	85,549	88,872	174,421
California	39,255	17,586	227	644,495	650,119	1,294,614
Colorado	13,144	2,641	170	345,868	260,943	606,811
Eastern States	3,227	491	25	17,100	37,150	54,250
Idaho	49,161	18,875	62	165,135	327,481	492,616
Montana/Dakotas	6,091	5,514	111	56,956	239,390	296,346
Nevada	22,704	6,083	51	263,972	650,400	914,372
New Mexico	6,345	2,840	12	33,221	82,726	115,947
Oregon/Washington	36,687	17,078	270	192,000	518,000	710,000
Utah	10,299	3,721	117	335,614	264,650	600,264
Wyoming	14,968	5,961	252	480,791	569,727	1,050,518
Totals	215,128	83,418	1,388	2,856,927	3,872,114	6,729,041

BLM Hands on the Land Sites

Site	Field Office	State
Campbell Creek Science Center	Anchorage District Office	Alaska
Glennallen Field Office	Glennallen Field Office	Alaska
Agua Fria National Monument	Phoenix Field Office	Arizona
Empire Ranch	Tucson Field Office	Arizona
Metro Tech's Fire Science Program	Phoenix Field Office	Arizona
Atwell Island	Bakersfield Field Office	California
Big Morongo Canyon Preserve	Palm Springs-South Coast Field Office	California
CA Coastal National Monument Trinidad Gateway	Arcata Field Office	California
Desert Discovery Center	Barstow Field Office	California
Fish Slough	Bishop Field Office	California
Headwaters Forest Reserve	Arcata Field Office	California
King Range National Conservation Area	Arcata Field Office	California
San Joaquin River Gorge	Bakersfield Field Office	California
Sand Canyon Environmental Education Program	Ridgecrest Field Office	California
Trinity County Resource Conservation District	Redding Field Office	California
Garden Park Fossil Area	Royal Gorge Field Office	Colorado
Jupiter Inlet Natural Area	Southeastern States Field Office	Florida
Challis Outdoor Classroom	Challis Field Office	Idaho
Coeur d'Alene Field Office	Coeur d'Alene Field Office	Idaho
FIRE Up for Summer	Idaho State Office	Idaho
Upper Missouri River Breaks NM Interpretive Center	Lewistown Field Office	Montana
Carson City District Office	Carson City District Office	Nevada
Don't Trash Nevada	Southern Nevada Field Office	Nevada
Red Rock Canyon National Conservation Area	Southern Nevada Field Office	Nevada
El Malpais National Conservation Area	Rio Puerco Field Office	New Mexico
Alder Creek Children's Forest	Roseburg District Office	Oregon
McGregor Park	Medford District Office	Oregon
Roseburg District	Roseburg District Office	Oregon
Table Rocks	Medford District Office	Oregon
West Eugene Wetlands Education Center	Eugene District Office	Oregon
Wildwood Recreation Site	Salem District Office	Oregon
Black Ledges Archaeology Camp	Cedar City Field Office	Utah
Green River Bonanza Bridge	Vernal Field Office	Utah
GSENM Student Explorations	Grand Staircase-Escalante NM	Utah
Meadowood Special Recreation Management Area	Lower Potomac Field Station	Virginia
Buffalo Field Office	Buffalo Field Office	Wyoming
Mallo Recreation Area	Newcastle Field Office	Wyoming
National Historic Trails Interpretive Center	Casper Field Office	Wyoming

BLM “LEARNING LANDSCAPES” WEBSITE, www.blm.gov/education

In addition to teacher workshops and other opportunities for professional development, the BLM offers a wealth of educational resources on its Learning Landscapes website. These include articles and classroom activities authored by BLM resource specialists, as well as educational pieces published as newspaper inserts and in other media.

The website also features highlights and educator guides from BLM-developed distance learning programs, including satellite broadcasts and interactive electronic field trips. Designed to complement existing curricula, BLM teacher resources typically focus on topics of particular interest to BLM land managers.

The Learning Landscapes site also offers resources for kids and lifetime learners, including “homework helpers,” engaging activities, and information to encourage young people and families to “Take It Outside!”

OTHER WEBSITES OF INTEREST

BLM Volunteer Program – www.blm.gov/volunteer. This site features BLM Volunteer Program activities, news, and projects.

BLM Youth Initiatives – www.blm.gov/wol/st/en/prog/more/blms_youth_initiatives.html. This site offers information on BLM programs for school-age youth, as well as resources on youth corps, internships, and BLM career opportunities.

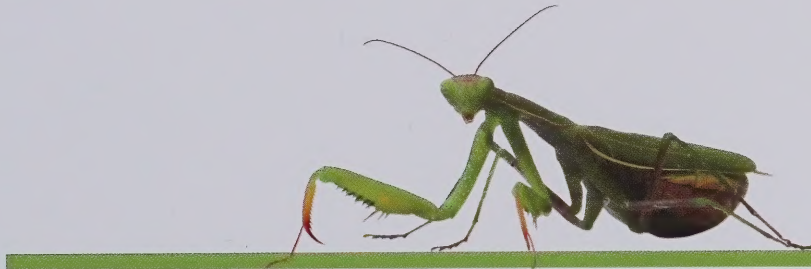
Hands on the Land – www.handsontheland.org. Teachers can find Hands on the Land educational resources, view site profiles, and take virtual tours.

Volunteer.gov – www.volunteer.gov.

Interested citizens can search volunteer job opportunities offered by several land management agencies, including the BLM.



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